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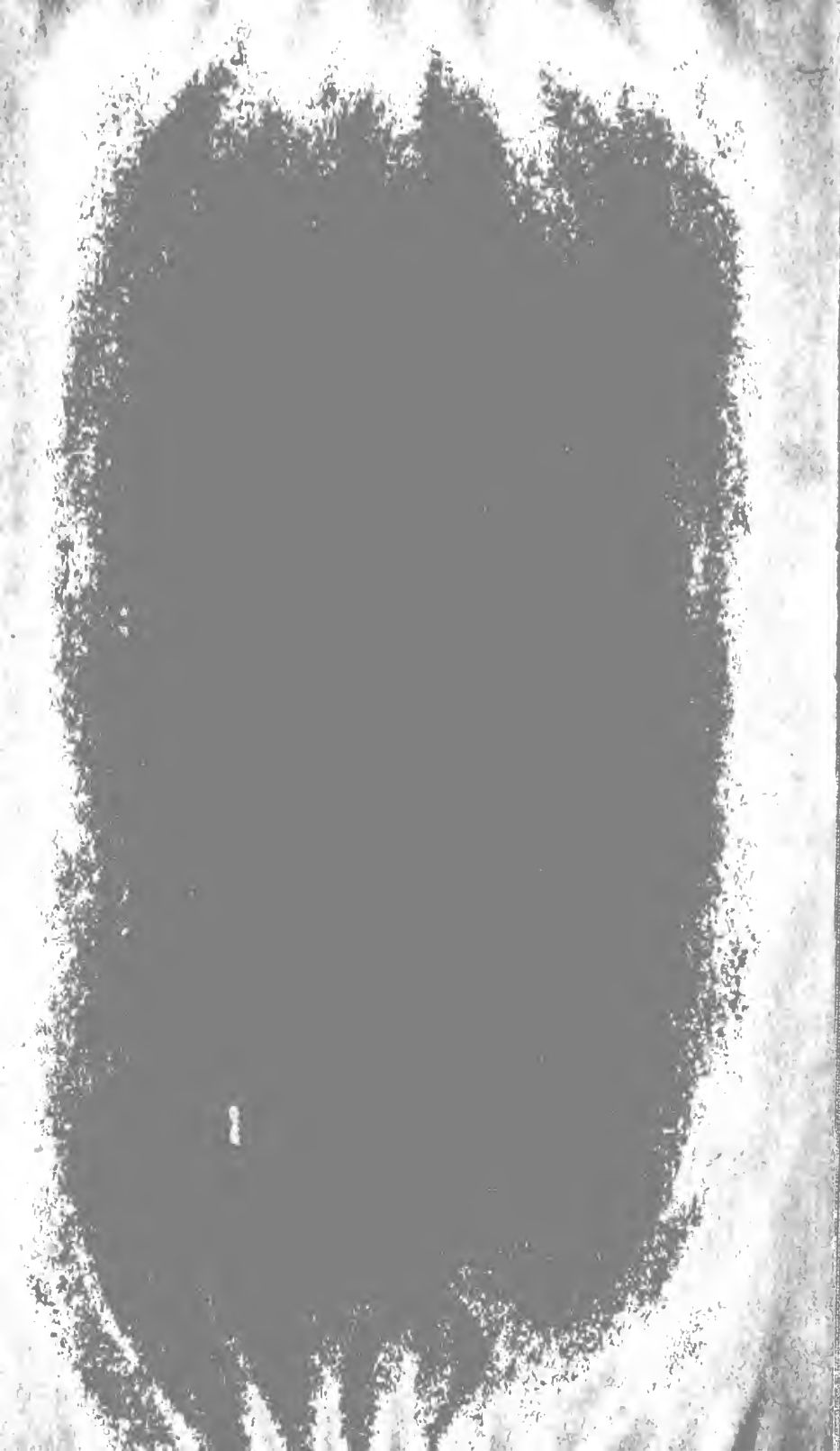
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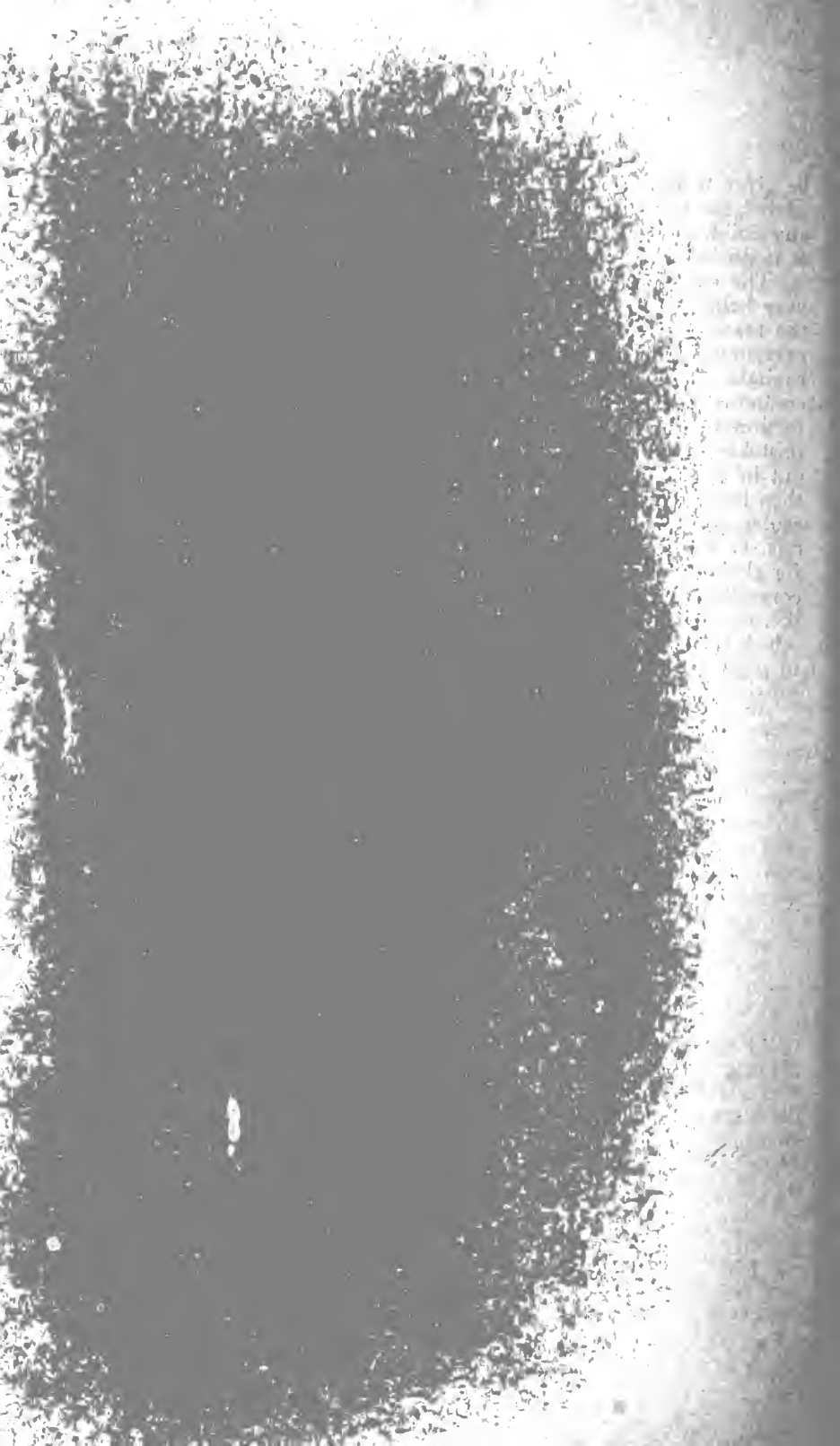
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DEPARTMENT OF EDUCATION

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COURSES OF STUDY

DEPARTMENT OF EDUCATION

CITY AND COUNTY
OF SAN FRANCISCO

COURSES OF STUDY

AUGUST, 1905

PREFACE.

Every effort has been made to reduce the necessary amount of work in the Course of Study. In every part of the civilized world the daily programme of the school seems crowded. The list of subjects is no briefer in Japan than in England, in England than in Germany, in Germany than in America, in New York than in California. Everywhere the course is full, for modern life is complex and preparation for it requires a variety of subjects. This makes large demand upon the teacher's time and strength. We have greatly lessened this demand by cutting much dead wood from the Course of Study. A minimum course has been prepared which may be taught in all schools in the required time. Some schools may do more, and materials and methods of amplification are indicated. Teachers are expected to get the spirit of this course and the aim of each subject taught in order that the supplemental work may be of the right character. Do not dwell upon things which are intentionally omitted; they may have value, but they are omitted to make room for matter of greater value.

Much is omitted in Arithmetic in order that life problems and life conditions may be taught. Geography is no longer a memoriter subject; it is descriptive, industrial, commercial, economical. Do not overdo the technicalities of grammar; give power of thought and of oral and written expression. To make the burden of this work as light as possible the best supplemental books are provided. Supplemental reading is provided in order that the child may learn to read by reading much. Optional literature is suggested in order that a few pieces may not be worn threadbare by over-critical study. Large movements and causal relations are to be emphasized in History. The parallel reading will add interest to the work. It is hoped soon to supply more books in History. The purpose of Nature Study is best accomplished by naturalizing the *entire* course, by making all teaching, when possible, concrete, by appealing to things rather than mere words. Naturalize all your teaching, then do as much nature study as time will permit.

In a system of schools where children pass from teacher to teacher and from school to school, uniformity of aims and a certain uniformity of methods are essential in order that the time of children be not wasted. As much freedom is left to the indi-

ADDITION.—In the addition stories the following combinations are to be used, being learned orally and incidentally, because the child can see, or imagine, the numbers involved:

$$\begin{array}{cccccccccccc}
 2 & 1 & 3 & 2 & 2 & 2 & 1 & 4 & 1 & 1 \\
 +2 & +3 & +2 & +1 & +3 & +1 & +1 & +1 & +1 & +4 \\
 \hline
 4 & 4 & 5 & 3 & 5 & 3 & 2 & 5 & 2 & 5
 \end{array}$$

There is no special order in which to use these combinations. No written work in addition combinations.

SUBTRACTION.—In the subtraction stories, use the same combinations as are given in addition. Use in a similar way.

B FIRST GRADE.

NUMBER WORK—FORMAL, WRITTEN AND APPLIED.

Written number work begins with this grade. Formal number work is now presented as such for the first time, the teacher having the child fix in the memory a certain number of fundamental combinations.

(1) All the combinations for this grade should be presented objectively to show that the result is really true. (2) Then the combination should be fixed in the memory so it will not be forgotten. (3) And finally, it should be applied in simple, oral problems so the combination can really be used for solving a real situation.

FORMAL WORK.

READING AND WRITING OF NUMBERS.—The children can count orally to 30. Teach them to write to 30.

Count orally by 10's to 100. Use bundles of ten sticks, etc., to represent counting by 10's. Bind 10 bundles of 10 to represent 100. Write by 10's to 100.

Show with written work that 10 follows 9; 20, 19; 30, 29; and use the written counting by 10's to advance the serial counting to 100. Much drill in oral and written counting to 99. Do not attempt to teach the place values of tens and units.

ADDITION.—Present objectively the following combinations, preferably in the order given:

$$\begin{array}{cccccccccccccccc}
 2 & 2 & 3 & 2 & 4 & 3 & 2 & 5 & 3 & 4 & 3 & 5 & 4 & 4 & 5 \\
 +2 & +3 & +2 & +4 & +2 & +3 & +5 & +2 & +4 & +3 & +5 & +3 & +4 & +5 & +4 \\
 \hline
 4 & 5 & 5 & 6 & 6 & 6 & 7 & 7 & 7 & 7 & 8 & 8 & 8 & 9 & 9
 \end{array}$$

Use the oral language form, "3 and 2 are 5," for $\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$

Then present the following, without objects in problem or story form, as the children will get them readily from the mere counting sequence:

$$\begin{array}{cccccccccccccccc}
 1 & 1 & 2 & 1 & 3 & 1 & 4 & 1 & 5 & 1 & 6 & 1 & 7 & 1 & 8 \\
 +1 & +2 & +1 & +3 & +1 & +4 & +1 & +5 & +1 & +6 & +1 & +7 & +1 & +8 & +1 \\
 \hline
 2 & 3 & 3 & 4 & 4 & 5 & 5 & 6 & 6 & 7 & 7 & 8 & 8 & 9 & 9
 \end{array}$$

To save time, teach $\begin{array}{r} 3 \\ +2 \\ \hline 5 \end{array}$ from $\begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array}$, $\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$ from $\begin{array}{r} 1 \\ +2 \\ \hline 3 \end{array}$, and so on.

When a combination is learned, apply it to a higher decade, as

$$\begin{array}{ccc}
 \begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array} & \begin{array}{r} 2 \\ +13 \\ \hline 15 \end{array} & \begin{array}{r} 2 \\ +23 \\ \hline 25 \end{array} \text{ etc.}
 \end{array}$$

When all the above combinations are known, begin column addition, as:

$$\begin{array}{r}
 3 \\
 2 \\
 4 \\
 \hline
 9
 \end{array}$$

Be sure the combinations involved, $\begin{array}{r} 2 \\ +4 \\ \hline 6 \end{array}$ and $\begin{array}{r} 3 \\ +6 \\ \hline 9 \end{array}$ are known before going to the column.

Next apply to higher decades, as

3	3	3	
2	2	2	etc.
4	14	24	
<hr/>	<hr/>	<hr/>	
9	19	29	

Give two-figure column addition, thus:

32
42
25
<hr/>
99

Finally, introduce 1's into your column addition, and later 0's, teaching the children to ignore the latter.

SUBTRACTION.—Teach subtraction by the method of addition as used by business men in making change. Use the combinations given under addition, but in the following form:

4	5	5	6	6	6	7	7	7	7	8	8	8	9	9
—2—	3—	2—	4—	2—	3—	5—	2—	4—	3—	5—	3—	4—	5—	4—
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
2	2	3	2	4	3	2	5	3	4	3	5	4	4	5

2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
—1—	2—	1—	3—	1—	4—	1—	5—	1—	6—	1—	7—	1—	8—	1—
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
1	1	2	1	3	1	4	1	5	1	6	1	7	1	8

Use the oral language form, "3 and 2 are 5," for

5
—3
<hr/>
2

Apply combinations to higher decades, as in

5	15	25
—3	—3	—3
<hr/>	<hr/>	<hr/>
2	12	22

but in *Oral Exercises Only*.

As fast as all the combinations of a single number are learned, use them in two-figure column subtraction, as

55
—32
<hr/>
23

Be sure to

have the child invariably attack the right-hand column first.

MEASURES.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Length—12 inches=1 foot.

3 feet =1 yard.

Value— 5 cents =1 nickel.

10 cents =1 dime.

10 dimes=1 dollar.

(Teach use of c. and \$.)

Liquid— 2 pints =1 quart.

Weight— 1 pound:

Use measures in connection with real situations in order that the child may know for what kind of things the measures are used, particularly in buying. Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

PROBLEMS.

All formal work in any form should be given in problem or story form as soon as it is mastered. As far as possible make the exercise in number stories in a single day's work deal with one set of topics, such as "a fruit store," "the schoolroom." This will make the stories real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulation of numbers, should follow, once the reasoning with simple figures is mastered.

Teach the terms, "add" and "subtract," for the two types of reasoning used in this grade. Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem or story, state what they are going to do—"add" or "subtract."

A SECOND GRADE.

FORMAL WORK.

READING AND WRITING OF NUMBERS.—The ability to count to 100 has been developed. Teach the child to count by 100's to 1,000, using bundles of sticks if necessary. Teach the writing of the same. Show that 100 follows 99, and that after 199 comes 200, etc. Extend to 1,000. Thorough drill on reading and writing of numbers to 1,000.

GROUP COUNTING.—Use oral group counting as a method of addition. When all the combinations of 11 are learned:

Count by 2's 1-3-5, etc.
 Count by 5's 1-6-11, etc.
 Count by 10's 1-11-21, etc.

When all the combinations of 12 are learned:

Count by 2's 2-4-6, etc.
 Count by 5's 2-7-12, etc.
 Count by 10's 2-12-22, etc.

When all the combinations of 13 are learned:

Count by 3's 1-4-7, etc., 2-5-8, etc., 3-6-9, etc.
 Count by 4's 1-5-9, etc., 3-7-11, etc.
 Count by 5's 3-8-13, etc.
 Count by 10's 3-13-23, etc.

ADDITION.—Present the combinations as far as the sum of 13. Objective presentation will, ordinarily, be unnecessary. Simply give the combinations and have the children memorize them. The combinations are as follows:

$$\begin{array}{r} 1 \ 9 \ 2 \ 8 \ 3 \ 7 \ 4 \ 4 \ 5 \\ +9+1+8+2+7+3+6+3+5 \\ \hline 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 \end{array}$$

$$\begin{array}{r} 1 \ 2 \ 9 \ 3 \ 8 \ 4 \ 7 \ 5 \ 6 \\ 10+9+2+8+3+7+4+6+5 \\ \hline 11 \ 11 \ 11 \ 11 \ 11 \ 11 \ 11 \ 11 \ 11 \end{array}$$

$$\begin{array}{r} 2 \ 3 \ 9 \ 4 \ 8 \ 5 \ 7 \ 6 \\ +10+9+3+8+4+7+5+6 \\ \hline 12 \ 12 \ 12 \ 12 \ 12 \ 12 \ 12 \ 12 \end{array}$$

$$\begin{array}{r} 3 \ 4 \ 9 \ 5 \ 8 \ 6 \ 7 \\ +10+9+4+8+5+7+6 \\ \hline 13 \ 13 \ 13 \ 13 \ 13 \ 13 \ 13 \end{array}$$

Use the oral language form, "9 and 1 are 10," for $\begin{array}{r} 1 \\ +9 \\ \hline 10 \end{array}$

To save time, from $\begin{array}{r} 1 \\ 9 \\ \hline 10 \end{array}$ teach $\begin{array}{r} 9 \\ 1 \\ \hline 10 \end{array}$, etc:

When a combination is learned apply it to a higher decade, as:

$\begin{array}{r} 2 \\ 8, \\ \hline 10 \end{array}$ $\begin{array}{r} 2 \\ 18, \\ \hline 20 \end{array}$ $\begin{array}{r} 2 \\ 28, \\ \hline 30 \end{array}$, etc.

As fast as all the combinations of a number are learned, use them in column addition:

$\begin{array}{r} 3 \\ 5 \\ 2 \\ \hline 10 \end{array}$

Apply to higher decades, as:

$\begin{array}{r} 3 \\ 5 \\ 2, \\ \hline 10 \end{array}$ $\begin{array}{r} 3 \\ 5 \\ 12, \\ \hline 20 \end{array}$ $\begin{array}{r} 3 \\ 5 \\ 22, \\ \hline 30 \end{array}$, etc.

Give two and three-figure column addition, thus:

$\begin{array}{r} 53 \\ 34 \\ 22, \\ \hline 109 \end{array}$ $\begin{array}{r} 532 \\ 342 \\ 225 \\ \hline 1099 \end{array}$

Be sure to have the children attack the right-hand column first, invariably.

After the combinations of 12 are known, teach "carrying" in column addition, as is 25 If an oral form is used, say, "Put 12 down the 2 and add the 1." It is 43 preferable not to use any visual aids 32 from the beginning.

SUBTRACTION.—Teach subtraction by the method of addition, as used by business men in making change. Use the combinations given under addition, but in the following visual form:

$$\begin{array}{r} 10 \\ -9 \\ \hline 1 \end{array} \begin{array}{r} 10 \\ -1 \\ \hline 9 \end{array} \begin{array}{r} 10 \\ -8 \\ \hline 2 \end{array} \begin{array}{r} 10 \\ -2 \\ \hline 8 \end{array} \begin{array}{r} 10 \\ -7 \\ \hline 3 \end{array} \begin{array}{r} 10 \\ -3 \\ \hline 7 \end{array} \begin{array}{r} 10 \\ -6 \\ \hline 4 \end{array} \begin{array}{r} 10 \\ -4 \\ \hline 6 \end{array} \begin{array}{r} 10 \\ -5 \\ \hline 5 \end{array} \begin{array}{r} 11 \\ -10 \\ \hline 1 \end{array} \begin{array}{r} 11 \\ -9 \\ \hline 2 \end{array} \begin{array}{r} 11 \\ -2 \\ \hline 9 \end{array} \begin{array}{r} 11 \\ -8 \\ \hline 3 \end{array} \begin{array}{r} 11 \\ -3 \\ \hline 8 \end{array} \begin{array}{r} 11 \\ -7 \\ \hline 4 \end{array} \begin{array}{r} 11 \\ -4 \\ \hline 7 \end{array} \begin{array}{r} 11 \\ -6 \\ \hline 5 \end{array} \begin{array}{r} 11 \\ -5 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 12 \\ -10 \\ \hline 2 \end{array} \begin{array}{r} 12 \\ -9 \\ \hline 3 \end{array} \begin{array}{r} 12 \\ -3 \\ \hline 9 \end{array} \begin{array}{r} 12 \\ -8 \\ \hline 4 \end{array} \begin{array}{r} 12 \\ -4 \\ \hline 8 \end{array} \begin{array}{r} 12 \\ -7 \\ \hline 5 \end{array} \begin{array}{r} 12 \\ -5 \\ \hline 7 \end{array} \begin{array}{r} 12 \\ -6 \\ \hline 6 \end{array} \begin{array}{r} 13 \\ -10 \\ \hline 3 \end{array} \begin{array}{r} 13 \\ -9 \\ \hline 4 \end{array} \begin{array}{r} 13 \\ -4 \\ \hline 9 \end{array} \begin{array}{r} 13 \\ -8 \\ \hline 5 \end{array} \begin{array}{r} 13 \\ -5 \\ \hline 8 \end{array} \begin{array}{r} 13 \\ -7 \\ \hline 6 \end{array} \begin{array}{r} 13 \\ -6 \\ \hline 7 \end{array}$$

Use the oral form, "9 and 1 are 10," for $\begin{array}{r} 10 \\ -9 \\ \hline 1 \end{array}$

Apply combinations to higher decades, as in

$$\begin{array}{r} 10 \\ -8 \\ \hline 2 \end{array} \begin{array}{r} 20 \\ -8 \\ \hline 12 \end{array} \begin{array}{r} 30 \\ -8 \\ \hline 22 \end{array}, \text{ etc.}$$

but in *Oral Exercises Only*.

As fast as all the combinations of a single number are learned use them in column subtraction where no "carrying" is involved, thus:

$$\begin{array}{r} 989 \\ -453 \\ \hline 536 \end{array} \begin{array}{r} 108 \\ -94 \\ \hline 14 \end{array}, \text{ etc.}$$

Teach the child to inspect the numbers before attempting to subtract, making sure that the number from which a number is to be subtracted is really larger, as in $\begin{array}{r} 389 \\ -421 \\ \hline \end{array}$. The answer to $\begin{array}{r} 345 \\ -345 \\ \hline \end{array}$

should be recognized by inspection as zero.

Teach the handling of the zero in column subtraction, as in

$$\begin{array}{r} \text{(a) } 867 \\ -467 \\ \hline 400 \end{array} \begin{array}{r} \text{(b) } 867 \\ -400 \\ \hline 467 \end{array}$$

MEASURES.—Teach the child to tell time. As preliminary to telling time, teach the Roman numerals to XII, and counting by 5's to 60. Teach children to say "5 minutes to 6," "5 minutes past 6," etc. Teach these measures:

Time— 60 minutes=1 hour.

24 hours =1 day.

Count—12 things =1 dozen.

Review measures of length (in., ft., yd.), value (ct., nickel, dime, dollar), liquid (pt., qt.).

Use measures in connection with real situations in order that children may know for what kind of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to children orally. Children will be given no problems in written (or printed) language form, though they may perform any necessary operations on blackboard or paper to assist them in solving a problem.

No problem is to involve more than one-step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning with written manipulation of numbers, should follow after the reasoning with simple figures is mastered.

As the work of this grade is confined to addition and subtraction, teach the terms "add" and "subtract" as the names for the two types of reasoning used. Wherever the figures in an example demand written manipulation always have the child, after hearing the problem or story, state what he is going to do—"add" or "subtract."

B SECOND GRADE.**FORMAL WORK.**

READING AND WRITING OF NUMBERS.—Reading and writing of numbers through three figures has been learned. Teach thousands by the group method. First, teach pointing off the numbers. Then, read the number in the thousand group as though it stood alone, giving the name "thousand" to the comma, proceeding with the next group as though it stood alone.

GROUP COUNTING.—Use oral group counting as a method of addition. When the combinations through 14 are learned, count by

4's	2-6-10-etc.	5's	4-9-14-etc.
4's	4-8-12-etc.	10's	4-14-24-etc.

When the combinations through 15 are learned, count by

5's	5-10-15-etc.	6's	1-7-13-etc.
10's	5-15-25-etc.	6's	3-9-15-etc.
		6's	5-11-17-etc.

When the combinations through 16 are learned, count by

6's	2-8-14-etc.	10's	6-16-26-etc.
6's	4-10-16-etc.		
6's	6-12-18-etc.		

When the combinations through 17 are learned, count by

7's	All series.	8's	1-9-17-etc.	10's	7-17-27-etc.
		8's	3-11-19-etc.		
		8's	5-13-21-etc.		
		8's	7-15-23-etc.		

When the combinations through 18 are learned, count by

8's	2-10-18-etc.	10's	8-18-28-etc.
8's	4-12-20-etc.		
8's	6-14-22-etc.		
8's	8-16-24-etc.		

When the combinations through 19 are learned, count by

9's	All series.	10's	9-19-29-etc.
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ADDITION.—Present the combinations as far as the sum of 19. Objective presentation will be unnecessary. Simply give the combinations and have the children memorize them. The written form is

$$\begin{array}{r} 4 \\ +10 \\ \hline 14 \end{array} \text{ and the oral form is "ten and four are fourteen."}$$

The combinations are as follows:

$$\begin{array}{r} 4 \quad 5 \quad 9 \quad 6 \quad 8 \quad 7 \\ +10 \quad +9 \quad +5 \quad +8 \quad +6 \quad +7 \\ \hline 14 \quad 14 \quad 14 \quad 14 \quad 14 \quad 14 \end{array} \quad \begin{array}{r} 5 \quad 6 \quad 9 \quad 7 \quad 8 \\ +10 \quad +9 \quad +6 \quad +8 \quad +7 \\ \hline 15 \quad 15 \quad 15 \quad 15 \quad 15 \end{array}$$

$$\begin{array}{r} 6 \quad 7 \quad 9 \quad 8 \\ +10 \quad +9 \quad +7 \quad +8 \\ \hline 16 \quad 16 \quad 16 \quad 16 \end{array} \quad \begin{array}{r} 7 \quad 8 \quad 9 \\ +10 \quad +9 \quad +8 \\ \hline 17 \quad 17 \quad 17 \end{array} \quad \begin{array}{r} 8 \quad 9 \\ +10 \quad +9 \\ \hline 18 \quad 18 \end{array} \quad \begin{array}{r} 9 \\ +10 \\ \hline 19 \end{array}$$

To save time, teach $\begin{array}{r} 9 \\ +5 \\ \hline 14 \end{array}$ from $\begin{array}{r} 5 \\ +9 \\ \hline 14 \end{array}$, etc.

When a combination is learned apply it to a higher decade, as

$$\begin{array}{r} 5 \\ +9 \\ \hline 14 \end{array}, \begin{array}{r} 5 \\ +19 \\ \hline 24 \end{array}, \begin{array}{r} 5 \\ +29 \\ \hline 34 \end{array}, \text{ etc.}$$

As fast as all the combinations of a number are learned, use them in column addition— Apply to higher decades,

$$\begin{array}{r} 3 \\ 2 \\ 5 \\ 4 \\ \hline 14 \end{array} \quad \begin{array}{r} 3 \\ 2 \\ 5 \\ 5 \\ 14, 24, \text{ etc.} \\ \hline 24 \quad 34 \end{array}$$

Give four, five and six-figure column addition, thus

$$\begin{array}{r}
 2,245 \\
 3,233 \\
 1,722 \\
 4,234, \text{ etc.} \\
 \hline
 11,434
 \end{array}$$

SUBTRACTION.—Teach subtraction by the method of addition as used by business men in making change. Use the combinations as given under addition, but in the following visual forms:

$$\begin{array}{cccccc}
 14 & 14 & 14 & 14 & 14 & 14 \\
 -10 & -9 & -5 & -8 & -6 & -7 \\
 \hline
 4 & 5 & 9 & 6 & 8 & 7
 \end{array}
 \qquad
 \begin{array}{ccccc}
 15 & 15 & 15 & 15 & 15 \\
 -10 & -9 & -6 & -8 & -7 \\
 \hline
 5 & 6 & 9 & 7 & 8
 \end{array}$$

$$\begin{array}{cccc}
 16 & 16 & 16 & 16 \\
 -10 & -9 & -7 & -8 \\
 \hline
 6 & 7 & 9 & 8
 \end{array}
 \qquad
 \begin{array}{ccc}
 17 & 17 & 17 \\
 -10 & -9 & -8 \\
 \hline
 7 & 8 & 9
 \end{array}
 \qquad
 \begin{array}{cc}
 18 & 18 \\
 -10 & -9 \\
 \hline
 8 & 9
 \end{array}
 \qquad
 \begin{array}{c}
 19 \\
 -10 \\
 \hline
 9
 \end{array}$$

$$\begin{array}{r}
 14 \\
 \text{In } -9 \text{ use the oral form "9 and 5 are 14."} \\
 \hline
 5
 \end{array}$$

Apply combinations to higher decades, as in 14 24 34
but in *Oral Exercises Only*.

$$\begin{array}{ccc}
 -9, & -9, & -9, \text{ etc.} \\
 \hline
 5 & 15 & 25
 \end{array}$$

Extend column subtraction, with combinations below ten, to four, five and six places:

$$\begin{array}{r}
 9786 \\
 -3652, \text{ etc.} \\
 \hline
 6134
 \end{array}$$

As fast as all the combinations of a single number are learned, use them in column subtraction of four, five and six figures, thus:

$$\begin{array}{r} 1498 \\ -964 \\ \hline 534 \end{array} \quad \begin{array}{r} 14986 \\ -9632 \\ \hline 5354 \end{array} \quad \begin{array}{r} 149869 \\ -94526 \\ \hline 55343 \end{array}$$

When the process of subtraction by addition is thoroughly mechanical with the children, teach "carrying" in subtraction.

The process of "carrying" should be taught as a purely mechanical process. First, teach the process where each possible step involves carrying, thus:

$$\begin{array}{r} 734 \\ -385 \\ \hline 349 \end{array} \quad \begin{array}{r} 8431 \\ -5675 \\ \hline 2756 \end{array}, \text{ etc.}$$

Later alternate "carrying" and "not carrying," thus, $\begin{array}{r} 8485 \\ -3946 \\ \hline 4539 \end{array}$

In $\begin{array}{r} 734 \\ -385 \\ \hline 349 \end{array}$ say "5 and 9 are 14" (putting down the 9), "9 and 4 are 13" (putting down the 4), "4 and 3 are 7" (putting down the 3).

You may call the attention of the child to the fact that whenever the upper number consists of two figures, the next lower number is raised one. The teacher might actually make the change in the visual form the first few times she teaches the oral form in connection with blackboard work. Experience makes it seem inadvisable to allow the children to cross out their written work, as they do quicker and better work if they are taught to imagine the change from the start.

MEASURES.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Weight—16 ounces=1 pound.
 Liquid — 2 pints =1 quart.
 4 quarts=1 gallon.
 Square — 1 square inch.
 1 square foot.
 Time —60 seconds=1 minute.
 60 minutes=1 hour.
 24 hours =1 day.
 7 days =1 week.

Review measures of length (inches, feet, yards), and value (cents, nickels, dimes, dollars).

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the children and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulation of numbers, should follow, after the reasoning with simple figures is mastered.

As the work of this grade is confined to addition and subtraction, teach the terms "add" and "subtract" as the names for the two types of reasoning used. Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do—"add" or "subtract."

A THIRD GRADE.

FORMAL WORK.

READING AND WRITING OF NUMBERS.—Frequent reviews of reading and writing of numbers of six figures in connection with the dictation of numbers for addition, subtraction, multiplication and division, and the reading of the answers of same.

ADDITION AND SUBTRACTION.—Give regular and frequent drills on accurate and rapid column addition and column subtraction.

MULTIPLICATION.—Present the multiplication combinations objectively, or by derivation from column addition, supplemented by objective work.

							2
						2	2
				2	2	2	2
		2	2	2	2	2	2
	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2
—	—	—	—	—	—	—	—
4	6	8	10	12	14	16	18

When you teach $\overset{2}{\times 2}$, at once show that $\overset{3}{\times 2}$, and so with all

the combinations having reverses.

Teach the following combinations in this grade; preferably in the order given:

$\overset{2}{\times 2}$	$\overset{2}{\times 3}$	$\overset{3}{\times 2}$	$\overset{2}{\times 4}$	$\overset{4}{\times 2}$	$\overset{2}{\times 5}$	$\overset{5}{\times 2}$	$\overset{2}{\times 6}$	$\overset{6}{\times 2}$	$\overset{2}{\times 7}$	$\overset{7}{\times 2}$	$\overset{2}{\times 8}$	$\overset{8}{\times 2}$	$\overset{2}{\times 9}$	$\overset{9}{\times 2}$
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	6	6	8	8	10	10	12	12	14	14	16	16	18	18

$\overset{3}{\times 3}$	$\overset{3}{\times 4}$	$\overset{4}{\times 3}$	$\overset{3}{\times 5}$	$\overset{5}{\times 3}$	$\overset{3}{\times 6}$	$\overset{6}{\times 3}$	$\overset{3}{\times 7}$	$\overset{7}{\times 3}$	$\overset{3}{\times 8}$	$\overset{8}{\times 3}$	$\overset{3}{\times 9}$	$\overset{9}{\times 3}$
—	—	—	—	—	—	—	—	—	—	—	—	—
9	12	12	15	15	18	18	21	21	24	24	27	27

$\overset{4}{\times 4}$	$\overset{4}{\times 5}$	$\overset{5}{\times 4}$	$\overset{4}{\times 6}$	$\overset{6}{\times 4}$	$\overset{4}{\times 7}$	$\overset{7}{\times 4}$	$\overset{4}{\times 8}$	$\overset{8}{\times 4}$	$\overset{4}{\times 9}$	$\overset{9}{\times 4}$
—	—	—	—	—	—	—	—	—	—	—
16	20	20	24	24	28	28	32	32	36	36

Use the oral form "3 2's are 6" for $\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$

As soon as each table of combinations is learned, drill in column multiplication up to four numbers in the multiplicand. Omit all zeros and, at first, all ones.

(a) No "carrying" in the multiplication:— $\begin{array}{r} 342 \\ \times 2 \\ \hline 684 \end{array}$

(b) With "carrying":— $\begin{array}{r} 9578 \\ \times 2 \\ \hline 19156 \end{array}$

(c) With two figures in the multiplier:— $\begin{array}{r} 232 \\ \times 32 \\ \hline 464 \\ 696 \\ \hline 7424 \end{array}$

Call attention to the fact that the first number of a partial product *put down* is always put down *under* the figure used to multiply.

Teach the 1 combinations in column addition form. Precede it with an oral exercise where rhythm is used to fix the idea, saying: "One 1 is 1," "One 2 is 2," etc. Then apply in columns, thus:

$$\begin{array}{r} 2567 \\ \times 21 \\ \hline 2567 \\ 5134 \\ \hline 53907 \end{array}$$

Later, say, "2 ones are 2," "3 ones are 3," etc., and apply in columns, thus:

$$\begin{array}{r} 1214 \\ \times 43 \\ \hline 3642 \\ 4856 \\ \hline 52202 \end{array}$$

DIVISION.—Present the following combinations given under multiplication, but in the following form:

$$\begin{array}{cccccccccccccccc} \frac{2}{2)4} & \frac{3}{2)6} & \frac{2}{3)6} & \frac{4}{2)8} & \frac{2}{4)8} & \frac{5}{2)10} & \frac{2}{5)10} & \frac{6}{2)12} & \frac{2}{6)12} & \frac{7}{2)14} & \frac{2}{7)14} & \frac{8}{2)16} & \frac{2}{8)16} & \frac{9}{2)18} & \frac{2}{9)18} \end{array}$$

$$\begin{array}{cccccccccccccccc} \frac{3}{3)9} & \frac{4}{3)12} & \frac{3}{4)12} & \frac{5}{3)15} & \frac{3}{5)15} & \frac{6}{3)18} & \frac{3}{6)18} & \frac{7}{3)21} & \frac{3}{7)21} & \frac{8}{3)24} & \frac{3}{8)24} & \frac{9}{3)27} & \frac{3}{9)27} \end{array}$$

$$\begin{array}{cccccccccccc} \frac{4}{4)16} & \frac{5}{4)20} & \frac{4}{5)20} & \frac{6}{4)24} & \frac{4}{6)24} & \frac{7}{4)28} & \frac{4}{7)28} & \frac{8}{4)32} & \frac{4}{8)32} & \frac{9}{4)36} & \frac{4}{9)36} \end{array}$$

3

Use the oral form "3 2's are 6" for 2)6

When a combination is mastered in the division form drill on it in the uneven division form:

$$\begin{array}{r} 2 \\ \hline 2)5 \\ 4 \\ \hline 1 \end{array} \quad \begin{array}{r} 3 \\ \hline 3)10 \\ 9 \\ \hline 1 \end{array} \quad \begin{array}{r} 3 \\ \hline 3)11 \\ 9 \\ \hline 2 \end{array}$$

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$\begin{array}{r} 4 \\ \hline 4 \overline{)17} \\ 16 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ \hline 4 \overline{)18} \\ 16 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ \hline 4 \overline{)19} \\ 16 \\ \hline 3 \end{array}$
---	---	---

Extend the dividend to four places:

(a)	(b)	(c)
$\begin{array}{r} 48 \\ \hline 2 \overline{)97} \\ 8 \\ \hline 17 \\ 16 \\ \hline 1 \end{array}$	$\begin{array}{r} 155 \\ \hline 3 \overline{)467} \\ 3 \\ \hline 16 \\ 15 \\ \hline 17 \\ 15 \\ \hline 2 \end{array}$	$\begin{array}{r} 1274 \\ \hline 4 \overline{)5099} \\ 4 \\ \hline 10 \\ 8 \\ \hline 29 \\ 28 \\ \hline 19 \\ 16 \\ \hline 3 \end{array}$

Drill on the following types of zero difficulties to be certain the child can handle them:

(a)	(b)	(c)
$\begin{array}{r} 235 \\ \hline 3 \overline{)706} \\ 6 \\ \hline 10 \\ 9 \\ \hline 16 \\ 15 \\ \hline 1 \end{array}$	$\begin{array}{r} 247 \\ \hline 3 \overline{)741} \\ 6 \\ \hline 14 \\ 12 \\ \hline 21 \\ 21 \\ \hline \end{array}$	$\begin{array}{r} 515 \\ \hline 3 \overline{)1547} \\ 15 \\ \hline 4 \\ 3 \\ \hline 17 \\ 15 \\ \hline 2 \end{array}$

MEASURES.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Square—9 square feet=1 square yard.

Cubic— 1 cubic inch.

1 cubic foot.

A penny =1 cent.

Value— A quarter=25 cents.

A half =50 cents.

A dollar =100 cents.

Teach children to count by 5's and 10's to 100 so as to add their money orally. Count the big coins first. Show that you add and subtract dollars and cents like other numbers, writing dollars under dollars and cents under cents, thus:

\$4.75	\$3.65
2.15,	1.20, etc.
<hr/>	<hr/>
\$6.90	\$2.45

Review measures of length (in., ft., yd.), liquid (pt., qt., gal.), weight (oz., lb.), time (sec., min., hr., day, wk.) and value.

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the children and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on black-board or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulation of numbers, should follow after the reasoning with simple figures is mastered.

In addition to the terms "add" and "subtract" teach the terms "multiply," "divide" for the types of reasoning involved in problems in simple multiplication and division, the special work of this grade. Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do—"add," "subtract," "multiply" or "divide."

B THIRD GRADE.

FORMAL WORK.

READING AND WRITING OF NUMBERS.—Review reading and writing of numbers of six figures.

Teach the reading and writing of millions, using the group method. First teach pointing off from right to left, thus: 275,432,678. Teach the reading of the figures within the group as though they stood alone; then give the name of the comma, then proceed to the next group until the whole number is called. Thus 275,432,678 would be read 275 million, 432 thousand, 678. Avoid the use of "and" in the reading of whole numbers.

ADDITION AND SUBTRACTION.—Give regular and frequent drills on accurate and rapid column addition and subtraction.

MULTIPLICATION.—Present the following combinations, preferably in the order given. No objective work will be necessary, as the children have had such presentation in the A Third Grade.

5	5	6	5	7	5	8	5	9
$\times 5$	$\times 6$	$\times 5$	$\times 7$	$\times 5$	$\times 8$	$\times 5$	$\times 9$	$\times 5$
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
25	30	30	35	35	40	40	45	45

6	6	7	6	8	6	9
$\times 6$	$\times 7$	$\times 6$	$\times 8$	$\times 6$	$\times 9$	$\times 6$
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
36	42	42	48	48	54	54

$$\begin{array}{r} 7 \\ \times 7 \\ \hline 49 \end{array} \quad \begin{array}{r} 7 \\ \times 8 \\ \hline 56 \end{array} \quad \begin{array}{r} 8 \\ \times 7 \\ \hline 56 \end{array} \quad \begin{array}{r} 7 \\ \times 9 \\ \hline 63 \end{array} \quad \begin{array}{r} 9 \\ \times 7 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 8 \\ \times 8 \\ \hline 64 \end{array} \quad \begin{array}{r} 8 \\ \times 9 \\ \hline 72 \end{array} \quad \begin{array}{r} 9 \\ \times 8 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 9 \\ \times 9 \\ \hline 81 \end{array}$$

When $\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$ is taught, teach $\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$, and so on with all combinations

having reverses. Use the oral form "6 5's are 30" for $\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$

As soon as each table of combinations is learned, apply in column multiplication as far as six figures in the multiplicand, omitting zeros at first.

$$\begin{array}{r} 135427 \\ \times 35 \\ \hline \end{array}$$

Before completing the work of the term extend to eight places, merely to show the child he can do it.

Extend the multiplier to three places. Before leaving the work extend to five places, merely to show the child he can do it.

Teach the use of 0 in column multiplication, use preparatory rhythmic drill, saying "2 zeros are zero," "3 zeros are zero," etc., and apply in columns—

$$\begin{array}{r} 4030 \\ \times 23 \\ \hline 12090 \\ 8060 \\ \hline 92690 \end{array}$$

Later say "zero 2's are zero," "zero 3's are zero," etc., and apply in columns—

$$\begin{array}{r}
 9678 \\
 \times 50 \\
 \hline
 0000 \\
 48390 \\
 \hline
 483900
 \end{array}$$

in multiplier, calling attention to the fact that the first number of a partial product *put down* is always put down *under* the number used to multiply—

$$\begin{array}{r}
 9678 \\
 \times 50 \\
 \hline
 483900
 \end{array}$$

DIVISION.—Present the combinations given under multiplication, but in the following form:

$$\begin{array}{cccccccc}
 5 & 6 & 5 & 7 & 5 & 8 & 5 & 9 & 5 \\
 \hline
 5)25 & 5)30 & 6)30 & 5)35 & 7)35 & 5)40 & 8)40 & 5)45 & 9)45
 \end{array}$$

$$\begin{array}{cccccccc}
 6 & 7 & 6 & 8 & 6 & 9 & 6 \\
 \hline
 6)36 & 6)42 & 7)42 & 6)48 & 8)48 & 6)54 & 9)54
 \end{array}$$

$$\begin{array}{cccccc}
 7 & 8 & 7 & 9 & 7 \\
 \hline
 7)49 & 7)56 & 8)56 & 7)63 & 9)63
 \end{array}$$

$$\begin{array}{ccc}
 8 & 9 & 8 \\
 \hline
 8)64 & 8)72 & 9)72
 \end{array}$$

$$\begin{array}{c}
 9 \\
 \hline
 9)81
 \end{array}$$

6

Use the oral form "six 5's are 30" for $5 \overline{)30}$.

When a combination is mastered in its even division form, apply and drill it in its uneven division forms—

$$\begin{array}{r}
 5^1 \quad 5^2 \quad 5^3 \quad 5^4 \\
 \hline
 5 \overline{)26} \quad 5 \overline{)27} \quad 5 \overline{)28} \quad 5 \overline{)29} \\
 \underline{25} \quad \underline{25} \quad \underline{25} \quad \underline{25} \\
 1 \quad 2 \quad 3 \quad 4
 \end{array}$$

$$\begin{array}{r}
 6^1 \quad 6^2 \quad 6^3 \quad 6^4 \quad 6^5 \\
 \hline
 6 \overline{)37} \quad 6 \overline{)38} \quad 6 \overline{)39} \quad 6 \overline{)40} \quad 6 \overline{)41} \\
 \underline{36} \quad \underline{36} \quad \underline{36} \quad \underline{36} \quad \underline{36} \\
 1 \quad 2 \quad 3 \quad 4 \quad 5
 \end{array}$$

$$\begin{array}{r}
 7^1 \quad 7^2 \quad 7^3 \quad 7^4 \quad 7^5 \quad 7^6 \\
 \hline
 7 \overline{)50} \quad 7 \overline{)51} \quad 7 \overline{)52} \quad 7 \overline{)53} \quad 7 \overline{)54} \quad 7 \overline{)55} \\
 \underline{49} \quad \underline{49} \quad \underline{49} \quad \underline{49} \quad \underline{49} \quad \underline{49} \\
 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6, \text{ etc.}
 \end{array}$$

Extend the dividend to five and six places. Before completing the work of the term, extend to eight places, merely to show the child he can handle a large number.

DIVISION.—Drill on the following types of zero difficulties to be certain the child can handle them:

$$\begin{array}{rcl}
 \text{(a)} & 508\frac{2}{3} & \text{(b)} \quad 502\frac{1}{3} \quad \text{(c)} \quad 500\frac{1}{3} \\
 \hline
 3 \overline{)1526} & & 3 \overline{)1507} \quad 3 \overline{)1501} \\
 \underline{15} & & \underline{15} \quad \underline{15} \\
 26 & & 7 \quad 1 \\
 \underline{24} & & \underline{6} \\
 2 & & 1
 \end{array}$$

FRACTIONS.—All work with reading, writing and changing of fractions in this grade is to be given objectively. The denominators of fractions used are not to exceed one figure. Teach objectively the halves, thirds, fourths, fifths and sixths, so as to make them meaningful.

Teach children to understand mixed numbers, using as a whole number a single figure with the fractions suggested above, as $1\frac{1}{2}$, $2\frac{2}{3}$, etc.

Teach children to understand improper fractions with the denominators above mentioned, $\frac{3}{2}$, $\frac{5}{3}$, etc.

Show that $\frac{2}{2}$ is equal to 1 whole, $\frac{3}{3}$, $\frac{4}{4}$, etc.

Show that $\frac{6}{8}$ is equal to $\frac{3}{4}$. Reduce simple fractions to lowest terms.

Then, with these same simple fractions, show through objective work how to change an improper fraction to a mixed number, a mixed number to an improper fraction, etc.

MEASURES.—Present the following measures, where possible, through objective work, showing equality where a table or part of a table is given:

Square—144 square inches=1 square foot.
(9 square feet=1 square yard.)

Weight—(16 ounces=1 pound.)
2000 pounds=1 ton.

Time—365 days=1 year, except leap year.
30 or 31 days=1 month, except February.
12 months=1 year.
"Thirty days hath September,
April, June and November."

Review measures of length (inches, feet, yards), weight (ounces, pounds), liquids (pints, quarts, gallons), time and value.

Use measures in connection with real situations in order that the child may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction. Use one step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are simple enough to fall within the formal work covered. Thus: "How many pints in 3 quarts?" "How many quarts in 8 pints?"

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning with written manipulation of numbers should follow where the reasoning with simple figures is mastered.

In addition to the terms "add" and "subtract," teach the terms "multiply," "divide," for the types of reasoning involved in problems in simple multiplication and division, the special work of this grade. Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do—"add," "subtract," "multiply" or "divide."

A FOURTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in READING AND WRITING OF NUMBERS and in column ADDITION, SUBTRACTION AND MULTIPLICATION.

DIVISION.—Review carefully long division by one number as long division by two numbers is to be nothing more nor less than an outgrowth of the division work of the previous grade.

Teach long division by two figures, using through the entire grade such divisors as 91, 83, 72, etc., where the second figure is much smaller than the first.

Present long division in the following steps:

- (1) (a) *Object*—To teach use of trial divisor.
 (b) *Material*—Use dividend that will give one figure in quotient and make first trial divisor the final

$$\begin{array}{r}
 9^{15}91 \\
 \hline
 \text{quotient, as in: } 91 \overline{)834} \\
 819 \\
 \hline
 15
 \end{array}$$

- (c) *Process*—"How many 9's in 83?"
 "9 9's in 83."

Multiply 91 by 9.

Subtract.

Put remainder in answer.

Give much drill on this step so that the work becomes mechanical.

- (2) (a) *Object*—To teach method of testing.
 (b) *Material*—Use dividend that will give one figure in quotient, but where first trial divisor is not the final quotient (where the final trial divisor is one less than the first

$$\begin{array}{r}
 8^{83}93 \\
 \hline
 \text{trial divisor), as in: } 93 \overline{)827} \\
 744 \\
 \hline
 83
 \end{array}$$

- (c) *Process*—"How many 9's in 81?"
 "9 9's in 81. Next number—17."
 "9 3's are 27. 27 is larger than 17, therefore the trial divisor is 8" (one less than 9).
 Multiply 93 by 8. •
 Subtract.
 Put remainder in answer.

Give much drill on this step so that the work becomes mechanical.

(3) Extend the dividend so as to get two figures in the quotient. Later three figures in the quotient.

Give much drill to make the work thoroughly mechanical.

FRACTIONS.—READING AND WRITING OF FRACTIONS.—The child can read, write and change fractions with one figure in the denominator. Extend the work to denominators of two figures as far as 81, using only the numbers learned as products in the multiplication combinations. Make certain that the child can perform with certainty the following changes:

(a) From mixed number (or whole number) to improper fraction.

(b) From improper fraction to mixed number (or whole number).

ADDITION OF FRACTIONS.—Present addition of fractions covering common denominators involving two figures, not higher than 81.

First, cover the difficulties with common denominators of one figure, illustrating the truth of the processes objectively, as follows:

(1) With the same denominators:

(a)	(b)	(c)	(d)
$\frac{1}{4}$	$1\frac{1}{4}$	$\frac{2}{3}$	$1\frac{2}{3}$
$\frac{2}{4}$	$3\frac{3}{4}$	$\frac{2}{3}$	$3\frac{2}{3}$
<hr/>	<hr/>	<hr/>	<hr/>
$\frac{3}{4}$	$4\frac{3}{4}$	$\frac{4}{3}$	$4\frac{4}{3}$
		$1\frac{1}{3}$	$1\frac{1}{3}$
			<hr/>
			$5\frac{1}{3}$

(2) With different denominators, one being a common denominator:

(a)	(b)	(c)	(d)
$\frac{1}{2}$	$\frac{2}{4}$		
$\frac{1}{4}$			
<hr/>			
$\frac{3}{4}$			

(Carry through steps b, c and d)

(3) With different denominators, none being a common denominator:

(a)	(b)	(c)	(d)
$\begin{array}{r} \frac{1}{2} \\ \frac{1}{3} \\ \hline \end{array}$	$\frac{3}{6}$ $\frac{2}{6}$	$\frac{1}{2}$	$\frac{2}{3}$
$\frac{5}{6}$	(Carry through steps b, c and d.)		

Later, cover the same difficulties with common denominators that fall within the multiplication combinations learned.

After the addition of two fractions (or mixed numbers) is well mastered, give three or four to show that the same principle applies, but keep the examples simple.

Drill on reduction to lowest terms whenever the opportunity occurs.

DECIMALS.—READING AND WRITING OF DECIMALS.—Teach reading and writing of decimals through three places.

Show that decimals are only a form of common fractions by objective work, or derive the relationship from U. S. money. The child already knows a "quarter" is \$.25, a "half" \$.50, etc.

With very simple numbers show how to make the following changes:

- (1) Change a decimal to a fraction.
- (2) Change a fraction to a decimal.

MEASURE.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Length—12 inches=1 foot.

3 feet=1 yard.

16½ feet or 5½ yards=1 rod.

Cubic—1728 cu. in.=1 cu. ft.

27 cu. ft.=1 cu. yd.

Review measures of area (sq. in., sq. ft., sq. yd.), weight (ounces, pounds, tons), liquids (pts., qts., gals.), time and value.

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction. Use one step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are not too difficult for the children. Thus: "How many months in 23 years?" "How many years in 36 months?"

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

All problems are to be presented to the child orally, though he may perform necessary operations on blackboard or paper.

Review problems involving one-step reasoning, as they form the basis for solving problems with two-step reasoning which are presented for the first time in this grade. Present two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple, one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation always have the children, after hearing the problems, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

B FOURTH GRADE.**FORMAL WORK.**

WHOLE NUMBERS.—Give regular and frequent reviews in **READING AND WRITING OF NUMBERS** and in column **ADDITION, SUBTRACTION** and **MULTIPLICATION**.

DIVISION.—Review long division by two numbers with easy divisors, such as 91, 82, etc. Gradually give more difficult divisors, such as 27, 38, 49, etc. The teacher may show the children on the blackboard how to perform long division with such divisors by "testing," which is a slow method, then presenting the method of having the children call such divisors as 27, 28, 29, "thirty," for purposes of getting the partial quotient. Extend the divisor to three or four places in a few lessons just to show that the principles of long division already mastered apply.

At the beginning of this term teach short division as a short way of doing division by one figure, as in

$$\begin{array}{r} 9535\frac{5}{8} \\ \hline 8 \overline{) 76285} \end{array}$$

FRACTIONS.—Review READING AND WRITING OF FRACTIONS with changes from mixed number to improper fraction, and vice versa. Review ADDITION OF FRACTIONS and mixed numbers where the denominator is not above 81.

SUBTRACTION OF FRACTIONS.—Present subtraction of fractions covering common denominators involving two figures, not higher than 81.

First, cover the difficulties with common denominators of one figure, illustrating the truth of the processes objectively, as follows:

(1) With the same denominators:

(a)	(b)	(c)
$\frac{4}{5}$	$6\frac{4}{5}$	$5\frac{7}{5}$
$\frac{2}{5}$	$3\frac{2}{5}$	$6\frac{3}{5}$
<hr/>	<hr/>	<hr/>
$\frac{2}{5}$	$3\frac{2}{5}$	$2\frac{3}{5}$

(2) With different denominators, one being a common denominator:

(a)	(b)	(c)
$\frac{3}{4}$		
$\frac{1}{2}$	$\frac{2}{4}$	
<hr/>		
$\frac{1}{4}$		(Carry through steps b and c.)

(3) With different denominators, none being a common denominator:

(a)	(b)	(c)
$\frac{3}{8}$	$\frac{4}{6}$	
$\frac{1}{2}$	$\frac{3}{6}$	
<hr/>	<hr/>	
$\frac{1}{6}$		(Carry through steps b and c.)

Later, cover the same difficulties with common denominators that fall within the multiplication combinations learned.

Drill on reduction to lowest terms whenever the opportunity occurs.

DECIMALS.—Review READING AND WRITING OF DECIMALS, with changes from decimal to fraction, and vice versa.

ADDITION AND SUBTRACTION OF DECIMALS.—Teach addition and subtraction of decimals of three places in this grade. Give a preliminary drill in arrangement of decimals according to the decimal point. When the children can arrange the numbers, teach bringing down the decimal point. Then add or subtract as with whole numbers, thus:

$ \begin{array}{r} \text{(a)} \quad 81.05 \\ \quad 9.156 \\ \quad 70.84 \\ \hline 161.046 \end{array} $	$ \begin{array}{r} \text{(b)} \quad 974.02 \\ \quad 6.045 \\ \hline 967.975 \end{array} $
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Later, extend the decimal places in a few exercises to show that the same principle applies.

MEASURES.—Add to the measures already learned the following:

Length—5280 feet=320 rods=1 mile.

Square—30 $\frac{1}{4}$ sq. yards=1 square rod.

160 square rods=1 acre.

640 acres=1 square mile.

Cubic—1728 cubic inches=1 cubic foot.

27 cubic feet=1 cubic yard.

128 cubic feet=1 cord.

Review measures of liquid (pt., qt., gal.), weight (oz., lb., ton), U. S. money and time, and also previously learned parts of linear (in., ft., yd.), and square measure (sq. in., sq. ft., sq. yd.).

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible use the measures as concrete material for the application of formal addition and subtraction. Use one-step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are not too difficult for the children. Thus, "How many months in 23 years?" "How many years in 36 months?"

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

All problems are to be presented to the child orally, though he may perform necessary operations on blackboard or paper.

Review problems involving one-step reasoning, as they form the basis for solving problems with two-step reasoning which constitute the special work of this year. Give two-step reasoning problems, such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems, such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

A FIFTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in reading and writing of numbers, in column addition, subtraction and multiplication, and in long and short division.

FRACTIONS.—Review READING AND WRITING OF FRACTIONS with changes from decimal to fraction, and vice versa.

ADDITION AND SUBTRACTION OF FRACTIONS.—Review addition and subtraction of fractions with common denominators of two figures, up to 81.

Add and subtract fractions involving common denominators larger than 81. Proceed by the following steps:

- (1) (a) Object—To find common denominator for several fractions.
- (b) Material—Fractions, with denominators of two figures, not above 81 $\frac{5}{12}$, $\frac{7}{18}$.

$$(c) \text{ Process—} \begin{array}{r|rr} 3 & 12 & 18 \\ 2 & 4 & 6 \\ \hline & 2 & 3 \end{array} \quad \text{or} \quad \begin{array}{r|rr} 6 & 12 & 18 \\ & 2 & 3 \end{array}$$

Common denominator is the product of

$$3 \times 2 \times 2 \times 3 \text{ (or } 6 \times 2 \times 3) \text{ or } 36.$$

(2) Proceed to change fractions from one denominator to common denominator as with simpler figures, and add or subtract as before.

Merely give enough work in finding common denominator to fix the method. Give no more work with common denominators above 81 than is necessary to apply the factoring process.

MULTIPLICATION OF FRACTIONS.—Present multiplication of fractions by the method of "cancellation," thus: $\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$. Drill specially on cancellation. All answers should be in simplest terms. At first use only fractions with denominators of a single figure, using objective work to show correspondence of the process to reality. Give no other explanation. Drill the children until they are able to multiply the following with habitual and mechanical ease:

- (1) (a) Fraction by integer.
- (b) Integer by fraction.
- (c) Fraction by fraction.
- (2) (a) Mixed number by integer.
- (b) Integer by mixed number.
- (c) Mixed number by mixed number.

Later, use fractions with denominators of two figures up to 81. When the preceding work has been thoroughly mastered, a few exercises with larger denominators might be given, merely to show the children that the same method of operation applies.

DECIMALS.—Review READING AND WRITING OF DECIMALS, with changes from decimal to fraction and vice versa. Also review ADDITION AND SUBTRACTION OF DECIMALS.

MULTIPLICATION OF DECIMALS.—Teach multiplication of decimals (of three places) in this grade. First, multiply as though both multiplier and multiplicand were whole numbers. Then count up the total number of figures in decimal places in both multiplier and multiplicand. Finally, point off, from the right, the same number of figures in the product and place the decimal point. Thus:

$$\begin{array}{r}
 42.56 \\
 7.5 \\
 \hline
 21280 \\
 29792 \\
 \hline
 319.200
 \end{array}$$

Teach the process of "pointing off" as a purely mechanical one. Do not teach by memorizing a rule, but by having the child do it repeatedly. Give much drill.

DENOMINATE NUMBERS.—Review the measures of length (in., ft., yd., rd., mi.), area (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi.), volume (cu. in., cu. ft., cu. yd., cord), liquid (pt., qt., gal.), weight (oz., lb., ton), time and United States money.

Use measures in connection with real situations in order that children may know for what kind of things the measures are used in actual life.

Use two-step reduction, up and down, showing that two-step reduction is nothing but one-step reduction repeated. Do not continue the work after the principle is mastered.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Drill the child on problems presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child, so as not to confuse or puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show

that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures necessitating written work may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

B FIFTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in reading and writing of numbers, in column addition, subtraction and multiplication, and in long and short division.

FRACTIONS.—Review READING AND WRITING OF FRACTIONS, ADDITION, SUBTRACTION AND MULTIPLICATION OF FRACTIONS.

DIVISION OF FRACTIONS.—Present division of fractions by the method of "inversion and cancellation," thus:

$$\frac{3}{4} \div \frac{1}{8} = ? \quad \frac{3}{4} \times \frac{8}{1} = 6$$

Drill specially on inversion. All answers should be in simplest terms. At first use only fractions with denominators of a single figure, using objective work to show correspondence of the process with reality. Give no other explanation. Drill the children until they are able to divide the following with habitual and mechanical ease:

- (1) (a) Fraction by integer.
- (b) Integer by fraction.
- (c) Fraction by fraction.
- (2) (a) Mixed number by integer.
- (b) Integer by mixed number.
- (c) Mixed number by mixed number.

Later, use fractions with denominators of two figures, up to 81. When the preceding work has been mastered, a few exercises with larger denominators might be given merely to show the children that the same method of operation applies.

DECIMALS.—Review READING AND WRITING OF DECIMALS, ADDITION, SUBTRACTION AND MULTIPLICATION OF DECIMALS.

DIVISION OF DECIMALS.—Teach division of decimals (of three places) in this grade. First, give a preliminary drill in placing the decimal point in the quotient space. Thus:

$$8.3 \overline{) 9175.64} \quad \text{or} \quad 8.3 \overline{) 750.}$$

STEPS:

(2) Count the same number of places to the right of the decimal point in the dividend, and place a decimal point in the corresponding place in the quotient space.

(3) Divide as for whole numbers.

Teach this process of "pointing off" as a purely mechanical one. Do not teach by memorizing a rule, but by having the child do it repeatedly. Give much drill.

DENOMINATE NUMBERS.—Review the measures of length (in., ft., yd., rd., mi.), area (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi.), volume (cu. in., cu. ft., cu. yd., cord), liquid (pt., qt., gal.), weight (oz., lb., ton), time and United States money.

Use measures in connection with real situations in order that children may know for what kind of things the measures are used in actual life.

Use two-step reduction, up and down, showing that two-step reduction is nothing but one-step reduction repeated. Do not continue the work after the principle is mastered.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Drill the child on problems presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child so as not to confuse or puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

A SIXTH GRADE.

REVIEW OF FORMAL WORK.—There should be frequent and regular drill on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

PERCENTAGE.—The arithmetic work of the sixth year is given over to the treatment of percentage. In this grade the emphasis is on formal work in percentage, though the principles of percentage should receive constant application at every point. Special drill should be given on the following formal processes:

- (1) To find any per cent of a number.
- (2) To find what per cent one number is of another.
- (3) To find a number when a certain per cent of it is given.

Present percentage in its relation to decimals and common fractions, showing how to change from one to the other readily. The percentage equivalents of the most common fractions should be learned and used as the basis of much "mental" work. (*State Arith.*, p. 216.)

Apply percentage to simple, real situations, that the child is likely to need to understand in terms of per cent. Use simple interest, in years and half-years only, as one easy application.

Use *Grammar School Arithmetic* (Cal. State Series), as a text, selecting necessary material from pp. 216-228. Teachers may use Smith's *Grammar School Arithmetic* as a desk book from which to gather further material. (See pp. 181-184.)

BUSINESS LIFE.—Discuss the topic of "Going into Business." (See *Smith*, pp. 306, 307), showing that every person, whether he conducts a business, works on a wage, or draws an income, needs to be "businesslike." Discuss the following sub-topics: Simple Accounts (*Smith*, p. 338), Bank Accounts, Savings Banks, Banks of Deposit* (*Smith*, pp. 326-329). Show how to make out the following business forms: Simple Accounts, Deposit Slip, Check (*Smith*, pp. 328, 329, 204), Receipted Bill and Receipt (*Smith*, pp. 125, 136, 205).

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

B SIXTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

PERCENTAGE.—Review formal percentage, particularly the following processes:

- (1) To find any per cent of a number.
- (2) To find what per cent one number is of another.
- (3) To find a number when a certain per cent of it is given.
- (4) To change any per cent to decimal and common fractions, or the reverse.

BUSINESS APPLICATIONS.

As the work of the previous grade emphasized the formal work of percentage, the work of this grade emphasizes its application to business life. The special topic for this grade is "The Buying and Selling of Goods," and covers the sub-topics: "*Merchandising*," "*Commission*" and "*Trade Discount*." The teacher should discuss the nature and function of these various business relations before giving the technical and mathematical methods of computation used in the same. This information is just as valuable as the mere arithmetic and serves to make the latter seem more real and useful to the child.

MERCHANDISE.—Teach profit and loss in buying and selling of goods. Give simple problems that business men must solve every day. Avoid complicated problems with three and four steps in reasoning. Use *Grammar School Arithmetic* (State Series) as a text, selecting necessary material from pp. 228-230. Teacher may find additional material in Smith's *Grammar School Arithmetic*, pp. 194-197, which may be used as a desk book.

COMMISSION.—Teach the method of computing commissions for buying and selling goods. Stick to actual commission problems, avoiding complicated problems that are puzzling and unreal. Avoid problems, part of the data of which is in previous examples. Use *State Arithmetic*, selecting necessary material from pp. 230-233. Additional material may be found in *Smith's Arithmetic*, pp. 199-201.

TRADE DISCOUNT.—Teach the process of computing trade discount. At first, avoid all examples mixing discount with profit and loss, etc. Two-step reasoning should be the limit in any problem, unless the principles involved are exceedingly simple. Use *State Arithmetic*, selecting necessary material from pp. 233-236. Additional material may be found in *Smith's Arithmetic*, 335-337. Have the children write orders and bills as suggested in *Smith*, p. 337.

MENTAL ARITHMETIC.

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A SEVENTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

BUSINESS APPLICATIONS.

In this grade the study of arithmetic as applied to business is continued. The special topic for this grade is "*The Borrowing and Loaning of Money*," and covers the special topic of "*Interest*," with some incidental treatment of "*Promissory Notes*," "*Partial Payments*" and "*Compound Interest*." Our whole system of loaning and borrowing money, with the function of banks, should be explained to the class before computing interest or writing notes.

INTEREST.—Simple interest for years and half years has been taken up as an application of percentage in the A Sixth Grade. In this grade study interest for years, months and days calculated by the 6 per cent method. Omit other methods. Use *Grammar School Arithmetic* (California State Series) as a text, selecting necessary material from pp. 236-243. Further material may be found in Smith's *Grammar School Arithmetic*, pp. 299-305, which may be used as a teacher's desk book.

Have the class write promissory notes, explaining their use and meaning. (See *State Arithmetic*, pp. 244, 245.) Treat partial payments and compound interest briefly, merely showing that they are both applications of simple interest, one being a decrease of the principal and the other an increase. Tell where and how they are used. No long and involved problems.

Omit Bank Discount.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

B SEVENTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

BUSINESS APPLICATIONS.

The study of arithmetic as applied to business is continued in this grade. The special topic for the term is "*The Protecting of Our Business Interests*," and includes the sub-topics of "*Insurance*" and "*Taxes*." Before treating the processes the class should discuss the institutions of Insurance and Taxation. The first is our way of paying a company for protection against accident, fire, water, etc. The second is our way of paying the government for protecting us against disorder, violence and lawlessness.

INSURANCE.—Discuss both Property and Personal Insurance, but teach the class to work examples only in Property (or Fire) Insurance, omitting all examples in Personal (or Life) Insurance. Use *Grammar School Arithmetic* (California State Series) as a text, selecting necessary material from pp. 254, 255. Further material may be found in Smith's *Grammar School Arithmetic* pp. 359, 360, which may be used as a teacher's desk book.

TAXES.—Discuss the various forms of taxation. Compute only Property Tax. Omit all examples in indirect taxation, such as Duties and Customs, Internal Revenue, etc. Select necessary material from *State Arithmetic*, pp. 259-261. For additional material, see *Smith's Arithmetic*, pp. 357, 358.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

choice of words, etc. Pupil then rewrites on right-hand page, correcting mistakes. As a premium on careful work, a cross at the top of left-hand page indicates that only the sentences in which mistakes occur need be copied on right-hand page. Appeal to pupil's pride to keep the right-hand pages as nearly blank as possible. Have them note improvement in their own work. See "Introduction to Language and Composition."

GRAMMAR.

Grammar treats of the thought relations of the sentence. Teach these relations, not technical terms only.

Do not teach the book merely, but use it as an aid in teaching the subject. The book does not grade difficulties. This must be done by selecting easy material for the gradual development of the subject. Begin each new subject with sentences in which the grammatical relation is most obvious. With each review, add sentences in which the difficulty is greater or the grammatical relation less obvious. Thus, the verb relation is most readily seen in verbs of one word expressing action, least obvious in the forms of the verb "be"; the noun relation is most clearly seen in names of children and objects in the room, least obvious in the names of qualities and abstractions. Do not present many difficulties in one lesson. The Grammar generally quotes sentences from good literature too difficult in thought and wording; these, however, may be used for final drill, the thought relation having been developed from simple sentences such as children read and speak.

Use "modify" only, not "qualify" and "limit." Omit kinds of nouns except common, proper, and collective; kinds of adjectives except proper; all kinds of adverbs.

Give much attention to the larger thought relations of the sentence. As soon as studied, apply the thought relations to the better interpretation of language in all other subjects.

Most of the composition indicated in the text-book should be omitted, as better material for composition will be found in connection with Geography, Literature, and History.

Not more than three lessons per week should be given to technical Grammar, the remainder to oral and written composition.

A SIXTH GRADE.

Lessons from State Grammar.—1, 2, 4, 6, 7, 9, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 24, 27.

Distinguish sentence from mere group of words, thus: The boys play ball, Playing ball in the park, The girls went to school, The girls while going to school, When we went home, When we went home it was dark. Continue such drill till children *feel* com-

APPLIED MEASUREMENTS.

Present such applications of measurements as are commonly used with reference to lines, angles, surfaces and solids. Give only the simplest problems of each type.

LINES.—Have the class understand what is meant by vertical, horizontal, oblique and parallel lines, using concrete work.

ANGLES.—Give concrete work, illustrating right, acute and obtuse angles. (*State Arith.*, p. 367.)

Apply angular or circular measure, using degrees only, to various angles, giving some idea as to what is meant by angles of 90 degrees, 45 degrees, etc. Select simple material from *State Arith.*, pp. 400, 401.

SURFACES.—Give concrete work, illustrating the various quadrilaterals and triangles and the circle. Teach finding the surfaces of the same, omitting trapezium, polygons and other difficult applications of measure. Later, when the children can recognize the solids, teach finding the surface of a rectangular prism. Carefully select simple material from *State Arith.*, pp. 365-383, and also see *Smith*, pp. 308-310, 319.

In connection with finding the surface of a square, treat the finding of the side of a square. Teach the formal process of SQUARE ROOT in this connection. Limited application to right-angled triangles. Select simple material from *State Arith.*, pp. 322-332, and see *Smith*, pp. 311-317.

SOLIDS.—Give concrete work, illustrating prisms, cylinder, pyramid, cone and sphere. Teach finding cubic contents of rectangular prism and cylinder only. Carefully select simple material from *State Arith.*, pp. 383-397, and also see *Smith*, p. 320.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

INTRODUCTION TO LANGUAGE AND COMPOSITION.

One aim of education is correct thinking. Composition is training the child to *think* and to express his thoughts in good English. As reading should be from the first a thought-getting process, so composition should be always a thought-expressing process. Even the formal drill for *fixing* certain forms in language should have a thought content. The teacher, therefore, must stimulate or awaken thought in the child before asking for its expression. The expression of the thought leads to greater clearness, so reforming and recasting the sentence, paragraph or composition gives better language and clearer thought. Correction is, therefore, an essential part of composition. It must, however, be only such as will help the child to better self-expression. Suit the corrections to the age and development of the child.

Essential to composition are meanings of words, sentence structures, thought, and motive or incentives for expression. The child learns oral language largely from what he hears; therefore must the teacher be a model of correct speaking. Written language is to a great extent an imitation of what the child reads. Thus is every reading lesson a teaching of composition. To be effective the child must be made observant of the meaning of words in their context, of the construction of sentences. The child must observe the unity of a good sentence, then the unity of a good paragraph, and later the unity of a good selection. As he thus thinks in its completeness the thought of another, he acquires completeness in his own thought. What he learns, in his reading lesson, of sentence and paragraph structure he applies in his study of history and geography, and what he learns from these subjects reacts upon his own thought and expression. Since we think in language as it sounds to us, good oral reading is of utmost importance; and, since we think in sound, reading composition aloud is the best method for its correction. Avoid all reading matter which contains bad grammar, such as dialect. Drill in correct forms till they *sound* correct to the child; then, as

he reads his composition aloud, his ear will detect errors which would escape memorized rules of technical grammar.

The child acquires thought from all the subjects which he studies in school; therefore must all subjects be drawn upon for composition material. Even in arithmetic, instead of always giving the children examples from a book, they should often be required to make up and word well their own examples. Before writing, the child should think his subject through and through, stimulated by questions from the teacher or by class discussion. He should then arrange his thoughts, following unconsciously the models that have been put before him in literature, geography and history. Do not check freedom and originality of thought by over-criticism, but, on the other hand, do not allow the writing to become crude by haste or indifference. Mere volubility from tongue or pen is not in itself a virtue. Both thinking and expression need guidance.

Motive for expression is of utmost importance. Per cent, grading, promotion, scolding and adverse criticism never lead to best effort. With most children, particularly the younger ones, the teacher's approval is a great incentive. Hearty appreciation of the good leads to the better. An appreciative audience is, perhaps, the greatest stimulus to a speaker or writer. The child may not have an audience for everything he writes, but if the teacher and class are occasionally his listeners, then other written exercises take on new interest as preparation for such audience. If the effort is an honest one, something may always be found to commend, and correction must be helpful to the child in better thought and expression.

ORAL COMPOSITION.

In the lower grades the composition should be largely oral, the written work increasing as a child advances from grade to grade. In the upper grades oral composition in large part takes the form of recitation. Correction in language should be made by quietly suggesting the right form and not by stopping the child's thought for a lecture on technical grammar. With a nervous or timid child the correction is best made at the close of his recitation. Occasionally exercises may be given for the express purpose of oral composition, subjects being assigned to look up and present to the class in talks. The subjects should always be such as will interest the listeners; thus the speaker has an attentive audience. Debates may give practice in speaking.

Children must be taught the use of authorities and reference books, preparation and arrangement of material, discrimination between argument and mere assertion, the difference between clear, forceful language and mere bombast. Debate unguided often controverts its own purpose.

SUBJECTS FOR COMPOSITION.

Pictures are good subjects for composition, especially for young children. Teachers must be skillful in leading children to a correct reading of a picture. We all read print; comparatively few read pictures. The exercise may be merely to describe what is seen in the picture or to make a story suggested by the picture. When children are slow to begin the work the teacher should be ready to suggest several lines of treatment, then ask each child to invent his own. A general class lesson may be given from a picture large enough to be seen by all. Small pictures pasted on cards are distributed to the class and each child holds up his picture as he reads or tells the story.

A story is read or told to the children. They reproduce the story as told; tell it with some modifications of incidents, or make a similar story of their own. Mere paraphrasing is not a good exercise in composition.

Nature study from plants, animals, outdoor geography, school gardening, experiments and observations and visits to commercial and manufacturing establishments will give most interesting thought for expression. Observation here forms a basis for both writing and drawing.

Geography is full of good composition subjects. These should generally take the form of letters from points of travel. The mere skeleton of facts given in the text book should be filled out from supplemental and parallel reading. The teacher should be always ready to suggest incidents that will give spice to such letters. Good letters of travel should be read to the class.

Reading and literature offer many good subjects. These are particularly useful for oral expression as a means for testing the power of silent reading. Attention must be constantly called to choice of words, structure of sentence and paragraph, paragraph topics and relation of paragraph topics to each other. Abstracting a prose selection tests the child's grasp of the thought. Character sketches, expanded descriptions or stories following the author as a model, all give power of thought and language. Current topics offer much of interest. A committee for each day

or week may be appointed to inform the class of important events. Their reports may be oral or written on the blackboard. Or a current topic paper may be prepared, editors being appointed for each week. This subject requires skillful handling. The teacher should possess an elementary knowledge of political economy and international law. Current history needs *interpreting* to be of any value to the children. Such work is recommended for the grammar grades.

The forms of business and social correspondence should receive much attention in the proper grades. These are the two forms of written composition which will be most used in after life. Our work is not to produce men of letters.

Much composition should be based on the parallel reading from history and geography. Half of the class may write at the board while the others write on paper.

Not everything the child writes need be corrected by the teacher. Encourage the children to find and correct their own errors before submitting to the teacher or to another pupil for criticism. Oral correction is most effective. Point out a few typical errors in several compositions; then have children look for similar ones in their own or their neighbor's work. Do not fail to commend excellence.

The following steps should be kept in mind as the aim of all good composition training:

1—Full reading, thought and collection of material. 2—Selection and arrangement before writing (outlining). 3—Free and spontaneous writing. 4—Careful criticism and revision. Most teachers aim at the third step, omitting the preparation. Many omit the fourth step, thus failing to make the pupil a self-critic. Some try to make the third and fourth step simultaneous, thus making the child self-conscious and the style stilted. The four steps are all necessary for the best originality.

Constant attention should be called to the qualities of good writing in history and literature. As the child learns to analyze the author's thought and perceive its arrangement, he masters the art of study, and this reacts upon his own power of thought and expression. Thus are all the Language Arts correlated.

LANGUAGE AND COMPOSITION.

FIRST YEAR.

Make all composition oral during the first year, taking material from reading lessons, stories, points of compass, observation of familiar things, spontaneous drawing, the acting of stories, etc.

During the second term teachers may, if they wish, train children to write on the blackboard their name, age and residence, using these in simple sentences.

SECOND YEAR.

Make the work largely oral. Let most of the written work be at the blackboard. At first single sentences, then several sentences pertaining to the same subject. Be sure that the child has a thought and the language is used to express that thought, not for the purpose of merely "making sentences."

Teach the use of capitals, period and question mark and such common abbreviations as Mr., Mrs., and Dr. Begin to observe in reading lessons quotation marks and comma, but do not yet teach the use of these.

THIRD YEAR.

Continue oral composition. Develop or stimulate thought on a subject, then write several sentences. Gradually lead children to rearrange sentences to make good paragraph. Call attention to structure of paragraph in reading, central thought, subordinate thoughts arranged about it. During second term write two or three paragraphs. Call attention in the reading to construction and arrangement of sentences to make them fit together in the paragraph. Make the ear the test of good composition. If the ear is incorrect educate it by oral drill and reading of correct form. Mere rules are useless if the expression does not *sound* right to the child.

A Third—*Lessons in Language* (State Series), in the hands of the children. Base part of the work on Lessons 1 to 14. See Third Year.

B Third—*Language Lessons* (State Series), in the hands of the children. Base part of the work on Lessons 15 to 32. See Third Year.

FOURTH YEAR.

Give special attention to paragraph writing from topic sentences, pictures, stories, etc., to outlining of paragraph topics, from reading or oral composition and to "Composite Composition":

(1) teacher and class talk over subject (oral composition); (2) select paragraph topics from previous discussion; (3) arrange topics for a letter; (4) children suggest sentences on first topic, teacher writes in corrected form on blackboard; (5) children read paragraph aloud to test correctness, smoothness, arrangement of sentences; (6) rewrite paragraph as corrected; (7) children copy corrected paragraph; (8) treat other paragraphs in similar manner. Lead children to more and more independent work in writing of paragraphs and outlining.

A Fourth—*Lessons in Language* (State Series), Lessons 33 to 50. Much material must be taken outside of the text book. See Fourth Year.

B Fourth—*Lessons in Language* (State Series), Lessons from 51 to 67. These lessons are but a small part of the term's work; much outside material must be used. Train children to observe meaning of words, sentence and paragraph structure in their reading lessons. See Fourth Year.

FIFTH YEAR.

Continue work of composite composition. (See Fourth Year.) Let children write one or more paragraphs of each composition independent of teacher, then read for criticism. Put emphasis on the good things. Gradually increase the number of paragraphs written independently. More and more independent outlining. Composite composition should be but part of the work. Children should do much writing, aiming only at free and spontaneous

expression of their own thoughts and feelings. Sometimes such thought and feeling must be stimulated by discussion, bringing out individual opinions and different points of view. Material is thus developed for a more formal lesson on arrangement of topics, paragraphing, etc. Compositions which happen to be well arranged in this spontaneous writing should be read and favorably commented upon. See "Introduction to Language and Composition."

A Fifth—*Lessons in Language* (State Series). Lessons 68 to 87 may be made the basis of part of the work. Suggestions for compositions may be found on pages 82 to 89. Much composition should be done from parallel reading in history and geography. See "Parallel Reading" and "Fifth Year Composition."

B Fifth—*Lessons in Language* (State Series). Lessons 88 to 102 will be basis of part of work. Suggestions for composition may be found on pages 89 to 94, but the same material need not be used. Much additional work must be taken. See A Fifth.

SIXTH TO EIGHTH GRADES.

Sixth, Seventh and Eighth Grades will take their composition subjects in part from the history and geography and the reading connected with these subjects. In addition to this, attention is to be given to paragraph writing and to outlining. The work suggested for Fourth and Fifth Grades may be used profitably for any children who have not had sufficient drill of this character. It is doubtful if any of our classes have had enough of this drill.

The oral correction of composition in class has been found very helpful, as each pupil gets the benefit of the corrections and the teacher is saved much laborious work. The teacher, however, must look over some composition for the sake of spelling, capitals, grammar, penmanship and correct form. Before a set of compositions is corrected by the teacher there should be oral correction in the class, pointing out in several papers characteristic mistakes. Composition should then be rewritten by pupils and put in the composition book or folder, using left page only. The teacher then looks over the composition, indicating by marginal signs the sentences in which mistakes occur, thus, S for spelling, C for capitals, G for grammar, P for punctuation, — for paragraph, W for

choice of words, etc. Pupil then rewrites on right-hand page, correcting mistakes. As a premium on careful work, a cross at the top of left-hand page indicates that only the sentences in which mistakes occur need be copied on right-hand page. Appeal to pupil's pride to keep the right-hand pages as nearly blank as possible. Have them note improvement in their own work. See "Introduction to Language and Composition."

GRAMMAR.

Grammar treats of the thought relations of the sentence. Teach these relations, not technical terms only.

Do not teach the book merely, but use it as an aid in teaching the subject. The book does not grade difficulties. This must be done by selecting easy material for the gradual development of the subject. Begin each new subject with sentences in which the grammatical relation is most obvious. With each review, add sentences in which the difficulty is greater or the grammatical relation less obvious. Thus, the verb relation is most readily seen in verbs of one word expressing action, least obvious in the forms of the verb "be"; the noun relation is most clearly seen in names of children and objects in the room, least obvious in the names of qualities and abstractions. Do not present many difficulties in one lesson. The Grammar generally quotes sentences from good literature too difficult in thought and wording; these, however, may be used for final drill, the thought relation having been developed from simple sentences such as children read and speak.

Use "modify" only, not "qualify" and "limit." Omit kinds of nouns except common, proper, and collective; kinds of adjectives except proper; all kinds of adverbs.

Give much attention to the larger thought relations of the sentence. As soon as studied, apply the thought relations to the better interpretation of language in all other subjects.

Most of the composition indicated in the text-book should be omitted, as better material for composition will be found in connection with Geography, Literature, and History.

Not more than three lessons per week should be given to technical Grammar, the remainder to oral and written composition.

A SIXTH GRADE.

Lessons from State Grammar.—1, 2, 4, 6, 7, 9, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 24, 27.

Distinguish sentence from mere group of words, thus: The boys play ball, Playing ball in the park, The girls went to school, The girls while going to school, When we went home, When we went home it was dark. Continue such drill till children *feel* com-

pleteness of statement, and complete sentences flow from tongue or pen. Repeat such drill whenever composition work shows need of it.

Teach subject and predicate in simple sentence, subject and predicate being in *usual* order, as: Birds fly, Boys play ball. Develop the idea of modifiers by expanding simple sentences, thus: The boys play ball, The large boys play football, The large boys of our school play football in the park, The large boys who attend our school play football in the park in pleasant weather. The large boys attending our school play football in the park when the weather is pleasant. When the weather is pleasant the large boys of our school play football in the park, etc. Tell whether each new modifier adds to the subject or to the predicate. Teach bare subject, bare predicate, entire subject, entire predicate in sentences like above.

Teach nouns, personal pronouns, verbs in most easily recognized forms. *Much drill.*

B SIXTH GRADE.

Lessons from State Grammar—24, 38, 41, 42, 49, 50, 51, 54 (57 and 63 omitted, but method applied to study of Horatius), 61, 64, 65, 67, 71.

Review subject and predicate. Teach subject and predicate in inverted sentences, as: The house stood under the trees, Under the tall tree by the river stood the house of the farmer. "Did what?" "Stood." "What stood?" "House." Add modifiers to subject and predicate making the sentences longer. Find modifiers of subject and predicate, but do not classify either as parts of speech or as phrases and clauses.

Review nouns, pronouns and verbs, adding more difficult forms. Teach verb phrases. Teach complements.

Teach to recognize adjective, adverb, preposition, co-ordinate conjunctions (and, or, but), interjections in simplest forms and uses.

Teach the helpers used with the three forms of the verb:

PRESENT	PAST.	PAST PARTICIPLE
Used alone or with <i>one</i> of these helpers: do, did, may, can, must, will, shall, could, would, should.	Means past time and is used <i>without</i> a helper.	When any <i>one</i> of these helpers is present: am, are, be, being, been, have, having, has, is, was, were.
see	saw	seen
go	went	gone
come	came	come
write	wrote	written
break	broke	broken
do	did	done
drive	drove	driven
sit	sat	sat
set	set	set
lay	laid	laid
lie	lay	lain

Keep these forms before the children on blackboard or in composition books and refer to them constantly in correcting oral and written language. Teach them to correct their own errors by referring to these forms. Have forms written in the proper column indicating the reason for the same, thus:

He <i>can</i> write.	He wrote (past).	He <i>had</i> written.
She <i>will</i> speak.	I spoke (past).	He could <i>have</i> written.
They speak (present).	He went (past).	I <i>had</i> spoken.
We <i>shall</i> go.	John came (past).	It <i>was</i> spoken.
		They must <i>have</i> spoken.
		<i>Having</i> gone.
		They must <i>have</i> gone.

A SEVENTH GRADE.

Lessons from State Grammar—2, 58, 85, 156, 21, 127, 128, 129, 83, 84, 100.

Review subject and predicate, adding more difficult sentences. *Much drill*, dwelling on the larger thought relations of the sen-

tence. Select sentences from Reading, Geography, History. Review helpers used with the three forms of the verb, applying to such verbs as do, drive, drink, eat, bite, give, know, ring, sing, rise, run, strike, take, blow, throw.

Teach phrases and clauses.

Teach subordinate conjunctions (conjunctive adverbs); relative, demonstrative, indefinite and interrogative pronouns.

Teach simple, complex, and compound sentences. *Much* phrase and clause analysis, selecting sentences from Reading, Geography and History. Show how different arrangements of phrases and clauses affect the meaning or emphasis of the sentence.

B SEVENTH GRADE.

Lessons from State Grammar—72 (omit 73 and 76), note to 76, 109, 102, 103, 104, 105, 106, 107, 108, 110, 111, 112, 113, 114, 115, 120, 121, 125, 126, 131, 132, 133, 185 to 188 (apply to study of literature).

Review verbs, adding more difficult ones. Teach verbals in contrast to verbs:—Boys play ball, The boys playing ball, We went to town, Having gone to town. "Play" and "went"—say it (or assert): "Playing," "having gone"—mean it (or imply).

Divide verbals into participles and infinitives *according to form* (infinitive, to see, to have seen) (participle, seeing, seen).

Teach use of participles and infinitives as subject of sentence, complement, object of verb or preposition, etc.

Nouns; collective nouns and their use, gender, number, and case.

Pronouns; gender, number, case, declensions.

Principal parts of twenty-five more verbs during term.

A EIGHTH GRADE.

Lessons from State Grammar—142, 155, 148 (omitting definitions), 158, 159, 173, 176, 177, 178, 179.

Review nouns and pronouns, principal parts of verbs and use list of irregular verbs in back of grammar.

Adjectives; comparison, omit kinds (except proper).

Adverbs; comparison, formed from adjectives by adding "ly," omit kinds.

Prepositions; compound, phrases as prepositions.

Conjunctions; co-ordinate, subordinate, correlative.

Much phrase and clause analysis with special attention to connectives. Select sentences from Reading, Geography, History. Note the effect of different arrangements on the meaning of the sentence; of different arrangements of phrases and clauses to give ready transition from thought to thought in the paragraph.

B EIGHTH GRADE.

Lessons from State Grammar—216 (teach this before Transitive and Intransitive Verbs), 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 203, 204, 205, 206, 207, 209, 210, 211, 212, 213, 221, 225, page 279.

Review participles and infinitives, verbal nouns, and adjectives. Principal parts of verbs, further use of list of irregular verbs, and use of dictionary for irregular verbs.

Verbs; voice, transitive (one which in active voice takes an object to complete its meaning) and intransitive, regular and irregular, mode, tense, full conjugation of verb and verb phrase.

Much word phrase and clause analysis, selecting sentences from other studies. Continue study of sentence and paragraph arrangement.

READING.

Reading should be both oral and silent. Silent reading is grasping the thought and feeling the emotion of the author. Oral reading is expressing the thought and emotion of the author to others. School reading should be interpretive, not imitative. The teacher's voice should be the child's model for good expression in reading.

The greater part of reading should be oral. Occasionally test the power of silent reading. Have children read paragraph, close books, tell what was read. Reread to see how much more can be grasped. The preparation of history and geography lessons, under the direction of the teacher, will give good training in silent reading.

Examples in arithmetic, sentences in grammar should be as well read as any selection in literature. The example or the sentence is often mastered when well read. A few minutes spent on the reading of a lesson when it is assigned will be very helpful in its mastery. The child's own composition affords good reading matter for natural expression.

The best motive in oral reading is expressing the thought to an audience. This motive is lacking when every member of the class sits with open book. Such exercises, however, are invaluable for class drill. The listening audience, the test of reading ability, will be furnished through parallel reading in history and geography.

Works of good literature have been selected for reading in the grammar grades. They should be read for appreciation, not critical analysis. After careful study and reading by the class, new beauty of thought and wording may sometimes be given by the teacher's reading. Avoid subtleties beyond the comprehension of the children. Most of the time should be given to *reading*.

In studying figures of speech show whether used to add beauty or clearness to the thought. Simile and metaphor present two pictures. Make children see both clearly, the points of difference and the one point of resemblance. Use pictures whenever possible. Train children to find and appreciate beautiful word pictures. The music of verse may be shown by a few exercises in scansion.

Supplementary reading in the grammar grades will be taken from the history and geography.

Pupils should be encouraged to do a fair amount of home reading along the lines of literature, history, geography, travel, and science. Work selected should be according to age and grade. Home reading is very injurious when it encroaches upon the hours of pure and healthful play. Play and reading of the right kind should receive equal encouragement from the teacher. The love of books may be encouraged by reading parts of good books to children and telling them more about the book and author. Children may be encouraged to do some of this reading to the class. A list of books suitable to the grade may be posted in a conspicuous place in the room. Some form of recognition may be given for home reading. In this case teacher must test amount and kind of reading. Do not give children in the grades books containing bad grammar either, as conversation or as dialect. Children learn their language by what they read and hear. In the grammar grades reading may be encouraged by forming a reading circle, meeting at regular intervals. Here, under guidance of the teacher, the pupils read selections from the books in which they are interested, the teacher reads or talks to them or a work is read through, each pupil reading aloud in turn.

Home reading should not be confined to books, but should include the best periodicals suited to children's comprehension.

Extracts from good juvenile books found in our Third and Fourth Readers may be used to awaken interest in these books. Teachers should familiarize themselves with these books, talk to the children about the books and their authors and read other selections. In this way children may acquire a liking for Mrs. Ewing, Thomas Nelson Page, Bayard Taylor, Charles Dickens, Elizabeth Stuart Phelps, Anna Sewall, Donald G. Mitchell, Charles Dudley Warner, J. Fenimore Cooper, Thomas Hughes (see *Fourth Reader*, pp. 8, 43, 52, 100, 183, 195, 229, 268, 356, 367). For home reading, see suggestions in the Appendix.

Sara Cone Bryant's *How to Tell Stories to Children* will be found useful for oral language, particularly in the First and Second Grades. It gives a good list of stories for grades from First to Fifth.

A FIRST GRADE.

Read from blackboard chart and *State Series Primer*. During first half term pupils read print only. Use diacritical marks as little as possible. Never mark a word if children can pronounce it without marking. The blackboard sentence and the printed

page which the child reads should be without diacritical marks. There should be much ear and voice drill; children should be made to hear sounds distinctly, then utter them clearly. Avoid the high-pitched voice so often heard in the primary room; keep the child's voice at a natural pitch. First-year pupils should not often be required to read so as to be heard across a large school room. It is better to gather them in groups about the teacher. Avoid so-called spelling by sound. Do not too far separate the sounds of a word in pronouncing. This often introduces wrong sounds and hinders rather than helps pronunciation. Clear, distinct pronunciation by the teacher is the best aid to the child in understanding and uttering a word. Do not overstress the obscure vowel sound in "a" and "the." It is better to err on the side of letting him give the long vowel, for this will soon be obscured without special drill. Let the article always be pronounced with the noun.

Use many action sentences. These show the grasp of thought; the child may pronounce all the words without relating them so as to convey to him the meaning of the sentence. When he has acted the sentence he may then read it aloud. The thought has been grasped and his reading will convey meaning. Give much attention to phrasing or grouping of words and to natural pauses.

Children should not spell during the first term

During the first ten weeks prepare for writing by much drill in movement exercises at board and at seats. Begin writing the second term. Make all composition oral, taking material from reading lessons, stories, points of compass, observation of familiar things, spontaneous drawing, etc.

B FIRST GRADE.

Continue the reading method of the A First Grade. Read during the term the *State First Reader* and two or more supplementary readers.

Begin oral spelling; written spelling should be left until the A Second Grade.

Begin writing at the blackboard, but omit writing at seats. All composition should be oral, as in A First Grade.

A SECOND GRADE.

One-half of the *State First Reader* and half of two or three other readers. Give special attention to phrasing, natural pauses, clear and distinct utterance and natural expression. Avoid the high-pitched voice. Give much practice in easy sight-reading.

Begin written spelling in this grade, but let the work be largely at the blackboard. Take the spelling from reading and language lessons. Children should learn to spell the words they use.

B SECOND GRADE.

Continue the work of A Second, completing the *State Second Reader* and the supplementary readers used in A Second. Any first reader not previously read will be good sight-reading in this grade (*Taylor's First Reader*).

A THIRD GRADE.

The transition from the *State Second* to the *State Third Reader* is somewhat difficult. To bridge this, spend five or six weeks on any good supplementary reader not previously studied or read. (*Child Life Second Reader*).

Read first forty pages of *State Third Reader*.

For supplementary reading, *Stepping Stones to Literature, Third Reader* to p. 63 and an equal amount in any other third reader.

B THIRD GRADE.

Read from p. 40 to p. 100, *State Third Reader*. Supplementary reading, *Stepping Stones to Literature, Third Reader* to page 137 and an equal amount of any other third-year reading matter.

A FOURTH GRADE.

Read *State Third Reader*, pp. 100 to 172. Supplementary reading, *Stepping Stones to Literature, Third Reader*. Complete the book and read half of *Great Americans for Little Americans*.

B FOURTH GRADE.

State Third Reader from p. 172 to p. 260. Supplementary reading, complete *Great Americans for Little Americans* and an equal amount of other supplementary reading.

A FIFTH GRADE.

Read the *State Fourth Reader* to p. 108 and one-half of *State Series Primary History*. Supplementary reading from History, Geography and other books.

B FIFTH GRADE.

Read *State Fourth Reader* from p. 108 to p. 229 and the last half of *State Series Primary History*. Supplementary reading from History, Geography and other books.

A SIXTH GRADE.

Complete the *State Fourth Reader*; **Lays of Ancient Rome* (5-cent Classics), **King of the Golden River* (Heath's Home and School Classics), supplementary reading from History and Geography.

B SIXTH GRADE.

1. *Miles Standish* (10-cent Classics).
2. **Water Babies*, by Kingsley (Maynard's English Classic Series).
3. **Lamb's Tales from Shakespeare* (Maynard's English Classic Series).†

A SEVENTH GRADE.

1. *Wonder Book, I, and II* (Riverside Series).
2. **Coming of Arthur and the Passing of Arthur* (Maynard's English Classic Series).
3. **Benjamin Franklin's Autobiography, Part I* (Riverside Literature Series).

B SEVENTH GRADE.

1. *Longfellow Leaflets* ("Building of the Ship" and one-half of shorter poems) (Riverside Series).
2. *Rip Van Winkle* and *Sleepy Hollow* (Graham's Practical Aids to Literature No. 1).
3. **Goldsmith's Deserted Village* (5-cent Classics).
4. **A Dog of Flanders* (Riverside Edition).

A EIGHT GRADE.

1. *Evangeline* (Riverside Series). *Graham's Aid in the Study and Teaching of Evangeline* is recommended for teachers.
2. *Dickens' Christmas Carol* (10-cent Classics).
3. **Selections from Eleven American Authors* (Riverside Series No. 87 Extra. [N.]).
4. **Merchant of Venice*.

B EIGHTH GRADE.

1. *Snow Bound* (Riverside Series).
2. Any one or two of the following to be taken the last half of the term:
A Hunting of the Deer, by Warner (Riverside Series).
Shakespeare's Julius Caesar (10-cent Classics).
Irving's Alhambra (Macmillan's Pocket Classics).
Thanatopsis (5-cent Classics).

MEMORY SELECTIONS.

Three poems are to be memorized each term. See Appendix. It is recommended that pupils purchase Miss Alice Power's Poems for Memorizing, which contains the poems required in all the grades.

PARALLEL READING.

Books in sets of five or six will be supplied for parallel reading in history and geography.

The purpose of these books is threefold: To vitalize the texts in history and geography by giving clear, vivid word pictures,

* May be taken or omitted at the option of teacher.

† This contains *The Tempest*, *Merchant of Venice* and *King Lear*. Teachers who want more selections may ask the children to get the 10-cent Classic Edition, Vol. 1. Educational Pub. Co.

to supply good prose for reading to a listening audience, to supply models of style and material for oral and written composition.

The teacher will make a selection pertaining to the day's lesson. A number of the class will read (at sight or after preparation) while the rest listen. Whenever the reading is not heard or understood, the class will raise hands. To insure attention, the teacher will question members of class during the reading. On the completion of the reading or a rereading of the whole by the teacher, part of the class will go to the board, while others work at the seats, reproducing what was read, making abstracts, or giving individual discussion of the matter read. This will be followed by oral criticism of the composition. Ten or fifteen minutes daily should be devoted to parallel reading. The writing and correcting may be part of the language lesson. The work in technical grammar has been shortened to allow for more composition. The periods for history, geography and language should be conveniently arranged for this work.

INTRODUCTION TO GEOGRAPHY.

Geography treats of the earth in its relation to man. It should give the child many facts useful for business or general intelligence. It should teach him how and where to find additional facts when needed.

These facts, however, should not be isolated, but should be taught in causal relation, thus making Geography elementary science.

The forces of nature largely control geographic conditions, but human influence has nearly or quite as great a place. Man has changed the vegetation and animals of a large part of the globe. The use which man makes of natural resources is governed largely by economic considerations. Thus physical Geography and economics form the background of Geography. These may be taught to children in elementary form.

The forces which have shaped the great features of the earth may be observed all about us. The influence of streams in erosion, transportation and deposit of sediment, the formation of hills, valleys, canyons, deltas, waterfalls, etc., may be as well seen and as well understood in the rivulet as in the mighty river, for the child may in a few minutes trace every part of a river system. Let his imagination magnify this and he has "The Father of Waters." Mapping this outdoor geography first with sand, then with chalk, will give a key to the proper interpretation of maps.

The elements of commerce and of economics are as easily observed as the forms of land and water. The principles governing the commerce of nations are involved in the buying and selling which the child sees daily. Division of labor studied in the most elementary form in the home, the school, establishments of few workmen, and later in larger establishments makes the child understand the cheapened cost of articles produced by the united effort of many skilled laborers. It is then clear that cheapened transportation enables communities to specialize in the production of that article for which their natural conditions are

best suited, and that all other articles are obtained most cheaply by exchange. Manufacturing and trade centers follow as necessities from this larger division of labor, and commerce is no longer an independent element, but an outgrowth of all other occupations. History may be seen as an outgrowth, in large part, of geographic conditions.

Maps are used for study and for reference. The study map should contain but few names. Children should be trained to use reference maps by looking up many map questions which they are not required to remember. All surfaces should be first studied from relief maps. Relief in sand has the advantage that it may be quickly made and cut across with sharp-edged ruler to show slopes. Sand relief maps should give only general features of surface. Do not exaggerate elevation more than is really necessary.

Outline maps without names are useful aids in study. The child may look from his book to the outline map to test his knowledge. Such maps may be put on the blackboard with stencil. Children should not draw maps from the book, copying all the details. Free-hand sketching of maps giving good proportion and most important features is all that should be attempted. This should generally be done with the teacher's drawing as a guide.

Product maps may be made on the blackboard, window shade, or black paper with colored crayons. These should give only the most important products and their general distribution. Children must understand that the color used in a region represents the thing produced there in excess of local needs. Everything produced cannot be represented. The area of a product is indicated by the extent of space colored, the quantity of product may be indicated roughly by the amount of color put on that space.

The following colors are suggested for product maps, others may be adopted as needed: Cotton and rice, white; grains, yellow; grazing, light green; forest, dark brown; manufactures, light gray; coal and iron, black; other minerals, red brown; tobacco, sienna brown; fish and oysters, blue; wool, blue white; oranges, orange; other fruit, pink; dairy products, white streaked; petroleum, dark gray.

Many maps not furnished by the school will be found useful to the teacher. These may be made with crayon on black paper or window shade and used again and again. Such are maps representing winds and ocean currents, rainfall, temperature, population, products and trade routes. Some of the maps in the books

will be more useful if thus enlarged, so that the entire class may see them at once. The amount of rainfall should be indicated by shading, not by colors. Rain is the same color the world over, different regions varying only in amount; color should be reserved for products.

The Introductory Geography is used at first as a guide to the teacher only. Its earlier pages contain much matter not especially adapted to our schools. Teachers, however, will get suggestions by reading over these pages.

The Grammar School Geography is both a text-book and a reference book. The large print contains matter, most of which every intelligent person should know. The fine print should be read in class and discussed with open book, but should not be learned. The child will thus have some acquaintance with this material and know where to find it when needed. The matter contained in the large print should be impressed upon the mind by vivid concrete pictures supplied by parallel and supplementary reading. (See Parallel Reading.)

The facts of Physical Geography are *told* in their special application to each continent studied; the *explanations* are left for the Eighth Grade, where Physical Geography is made a special study.

GEOGRAPHICAL EXCURSIONS.

Occasional excursions should be made to observe surface features (outdoor geography), building operations, manufacturing, shipping, commerce, etc. Each school must arrange with the places it can visit. Business men are very obliging, but children must not be sent alone to these places.

What has been observed in such excursions should be made the basis of much reading and discussion. Every bit of concreteness thus put into the work will serve as a nucleus about which will cling a large amount gathered from reading. An ounce of concreteness leavens a pound of abstractness. Thus a class observing the unloading of a ship at the water front will go back to its school and read with interest of the lumbering operations of California, Oregon, Washington, Maine, Michigan, Wisconsin, South Carolina, Georgia, and will trace the lumber of each section to the markets which it supplies. A visit to the woolen mills will add new interest to all that is read of the mills of New

England, England, France and Germany and to the great sheep ranges from which the wool is obtained. Even the sight of cotton balls on the dried plant will carry the children to the cotton fields of the sunny South, of India and of Egypt. A few strokes of the crayon on an outline map will fix in the minds of the children the regions which produce most of our clothing. We talk much of things which are but words to the children, when specimens and samples can be easily obtained. Every school should have a museum of geography. By adding interest to the study it would greatly lessen the work of the teacher.

Good geography material may be obtained from the Board of Trade and the rooms of the Promotion Committee. Teachers should not send children, but go in person.

GEOGRAPHY.

B SECOND GRADE.

Eight points of compass.

Names and directions of streets immediately about the school-house.

Give first impressions of mile and half-mile by distances to well-known places.

Have children estimate distance to a few places in the city.

Study, by observation, hills and valleys nearest the school-house, then model the same in moist sand. Do not over-exaggerate elevation.

Study map of San Francisco. If possible, let first impressions be given from map in horizontal position correct with points of compass. The map is a picture of the city as it might be seen from a balloon. Locate important places—Market Street, Ferries, Presidio, Golden Gate Park, City Hall, the schoolhouse and others near the school.

A THIRD GRADE.

Study (from observation as far as possible) soil, hills, mountains, valleys, rivers, ponds and lakes, the bay and ocean, peninsula, island, cape. (Refer to Introductory Geography. State Series, Part I, Sections 1 to 8.)

From blackboard and sand table teach principal points of San Francisco, San Francisco and San Pablo Bays, the peninsula as far south as San Jose, the Alameda and Contra Costa Counties shore line back to and including the mountain range, and the Marin County peninsula. The sand relief maps should show the outlines of the two arms of the bay, the coast line, the upper part of the Santa Clara Valley, the Golden Gate, Mt. Tamalpais, Angel Island, Alcatraz Island, Goat Island, Farallone Islands, Oakland, Berkeley, Alameda and Sausalito. (See Introductory Geography, 255 to 258.)

During the rainy season study the effects of stream erosion, transportation and deposit of sediment. Streams are rivers in miniature, having source, mouth, banks, bed, rapids, falls, deltas,

basins and divides. The forces that work in great rivers may be seen in the streams about our schoolhouses. The teacher may draw map of locality indicating these streams. Knowledge thus gained may be applied to the interpretation of maps. The study of the small stream which the child sees gives a key to the river which he cannot see. *Tarr's Physical Geography*, *Le Conte's Compend of Geology* and *Fairbank's Home Geography* will be suggestive to the teacher.

Teach natural features of the Bay Counties from map or sand table. (Refer to Part I, Sections 1 to 8, in Introductory Geography, as far as can be applied.)

B THIRD GRADE.

Continue the study of Outdoor Geography begun in A Third Grade.

Teach orally simple applications of division of labor seen in the family, the school, a small store, a street car and the erection of a building. Note that each laborer becomes very skillful by confining himself to one thing, and that many laborers combine their efforts to produce the better or the cheaper article. Note what each laborer performs in the erection of a building. Where do the materials used in the building come from and how are they transported? What articles of food and clothing does the city obtain from the country? What does the city do in return for these articles? Talk of a few manufacturing or wholesale houses nearest your school.

Sections 3 and 5, Introductory Geography (State Series).

If time permits, teacher may read to the children Jane Andrew's Seven Little Sisters.

A FOURTH GRADE.

Discuss division of labor in some large establishment, such as Cannery, Iron Works, Woolen Factory, Planing Mill, Department Store, etc.

Continue the study of Outdoor Geography. By questions direct observation of natural phenomena.

Introductory Geography, Part I, Sections 7, 8 and 9, book in the hands of the children.

The Bay Counties: Product regions, indicated by colored areas on the map; dairy products, fruit, wine, grain, etc.; locate trade center for each product area; teach railroad and water communication; chief market for each product; what is received in exchange.

Measure distances by using scale of miles, but do not memorize distances.

STUDY OF CALIFORNIA.

1. Present relief map of California on the sand table correct with points of compass. Do not over-exaggerate relief. Cut map to show slopes; elongated profile of cut section reducing elevation, drawn by teacher on blackboard. Draw east and west profile on east and west board, north and south profile on north and south board. From relief have children study mountains, valleys, slopes, etc.; locate drainage basins and rivers.

2. On relief and wall map locate Cape Mendocino, Point Reyes, Point Arena, Point Conception, Humboldt Bay, San Francisco Bay, Santa Cruz Bay, San Pedro, San Diego Bay.

3. Put on board a map showing prevailing winds, temperature and rainfall. (See California section of the Climate and Crop Service of the Weather Bureau.)

4. Show board or wall map and call attention to rivers and lakes resulting from rainfall and slopes.

5. Teach location of Sierra and Coast Range Mountains, Mt. Tamalpais, Mt. Diablo, Mt. Hamilton, Mt. Shasta and Mt. Whitney; of Sacramento, San Joaquin and Klamath Rivers; of Lake Tahoe and Lake Tulare.

If time permits the teacher may read Aunt Martha's Corner Cupboard to the class.

B FOURTH GRADE.

6. Review California studied in previous grade.

7. Teach children to trace California freehand, putting in locations learned in A Fourth.

8. In oral discussion have children trace California products found in our stores and markets to parts of State from which they come; fruits (apples, oranges, cherries, grapes, etc.), nuts, raisins, beans, butter, meat, flour, lumber, gold.

9. Make progressive product map, using colored crayon. Discuss regions in which each article is produced and climate essential to it; use pictures and give vivid word pictures of each product region; then teacher color the area on blackboard map, children coloring at blackboard or seats. Why does each region produce chiefly one article? How are other articles secured more easily by exchange? Explain economy in this large division of labor. Compare Robinson Crusoe, Colonial life, life among the Indians.

10. Show growth of trade center in each region (transportation and commerce as producers of wealth).

11. Exchange of goods by railroads, boats, etc.

12. In a broad view of the State, what do we produce more than we need? Where do we send it? What do we get in return? Teach San Francisco as the trade center for *the State*.

Introductory Geography, pages 92 to 119, in the hands of the pupils.

13. Use scale of miles to measure distances in the State, but do not commit to memory.

If time permits, read from Chamberlain's *How We Are Fed*, *The Past and the Present*, *The Story of a Loaf of Bread*, *How Our Meat Is Supplied*, *Market Gardening*, *Dairy Products*, *Butter Making*, *The Orange Groves of Southern California*, *A Visit to a Vineyard*.

Use text, pages 257-283, for reference.

A FIFTH GRADE.

Introductory Geography, pages 119 to 124. If time permits, teacher may take Section 4, Part II, or may read and explain to class without having them learn.

NORTH AMERICA.

1. Locate North America on the globe; note its relation to the Equator, Tropic and Arctic Circle, to other continents and to the oceans.

2. Present North America in relief on the sand table and study mountains, valleys, slopes from the relief. Do not over-

exaggerate relief. Teacher draw elongated profiles of the relief. (See California A Fourth Grade.)

3. Tell facts of ocean currents, winds, pertaining to North America. Do not explain winds and currents. Indicate on blackboard map prevailing winds and ocean currents. (See Grammar School Geography, pages 26 and 27.)

4. Put on blackboard rainfall map. (See Grammar School Geography, State Series, page 46.)

5. Compare winds and currents, rainfall map and relief map. Where will there be most rivers? In what direction will they flow? Look at wall map. Confirm conclusions.

6. Now study map questions and political divisions on pages 139 and 140.

BROAD STUDY OF THE UNITED STATES.

Before studying our country in sections give a broad survey of it as a whole. Then as each section is studied its relations to other sections and to the whole will be clearly seen.

Apply on a still larger scale division of labor. This principle has been seen in the Home Geography, in the building of the house and in the manufacturing establishment. In these each workman was a skilled specialist. In the study of the State, labor was divided among communities according to natural resources, each locality becoming skilled in the production of a special commodity.

From previous study review climate, drainage and soil of the United States.

Trace California products to Eastern markets, thus enlarging the geographic horizon through home interests. What do we receive in return? Where produced?

On the blackboard map mark product regions of the United States, using colored crayons. Begin with most prominent products of California, as wheat, livestock, lumber, fruit. As far as time will permit, give vivid pictures of each region studied. Tarr and McMurray's Geography, Book II; Carpenter's North America, King's Picturesque Geographical Readers, Youth's Companion Reprints (except article on raisins) contain good illustrations and word pictures.

What advantage has each sections in soil and climate for its product? How and where obtain other products in exchange? Locate trade center in each region. What are its advantages as a trade center? Put in the great continental lines of railroad. These railroad lines are as important in the map as rivers or coast lines.

The area of a product is indicated by the extent of space colored; the quantity of product may be indicated roughly by the amount of color put on that space.

In a general view of the map what things are produced in excess of our own needs? Show Boston, New York, Philadelphia, Chicago, New Orleans, San Francisco, Seattle as trade centers for the country as a whole.

Do not teach boundaries; do not teach capitals, unless important as trade centers. Children should be able to point, on outline map, to any State named by the teacher, or to name any State pointed to. Children should be able to locate any State in its product region or regions, but should not learn list of exports and imports for each State.

Study United States by sections from pages 140 to 188. Fine print (except review questions) may be omitted or read only.

If time allows, read to the class in connection with the proper groups of States the following chapters from Chamberlain's *How We Are Fed*: Cheese, Fishing Industry, Oyster Farming, A Rice Field, How Sugar Is Made (Cane Sugar, Beet Sugar, Maple Sugar), Salt, Cranberry Bog, Nutting, A Walnut Vacation.

In all the work from *Introductory Geography*, fine print, except review questions, may be omitted or used merely as reading matter.

Parallel reading for this grade will be found in *Our Own Country*. For method of this see *Parallel Reading*.

B FIFTH GRADE.

Complete North America. *Introductory Geography*, pages 188 to 198.

Make product map of Canada, similar to the United States, indicating grain, livestock, lumber, coal and iron, fisheries, gold and any others teachers may desire. In similar manner make product map of Mexico.

Complete the Introductory Geography, giving special attention to South America and Europe, and to India, China and Japan in Asia. If time permits, Africa and Australia may be studied from the book or used only as reading matter.

SOUTH AMERICA.

1. Present first on globe in relation to Equator, Tropics, to oceans and to other continents.

2. Show South America in relief on sand board. Have children study and describe its form and surface. Compare with North America. Cut the sand map, so that the profiles will show slopes. The teacher may draw elongated profiles on blackboard.

3. *Tell facts* about heat, winds and ocean currents of South America. Do not explain.

4. Present wind, temperature and rainfall maps on blackboard (Grammar School Geography, page 104).

5. Compare these with relief map.

6. Where would you expect most rivers, fewest rivers, longest and largest rivers, shortest rivers? Show wall map to confirm or correct opinions. Tell children about the size of the Amazon. (Afloat in the Forest contains good description.)

7. Result of physical conditions on soil and vegetation.

8. Train children to make freehand sketch of South America, putting into each map, in addition to coast line, mountains and rivers, the Equator, Tropics, ocean currents and prevailing winds. Children draw not from book or wall map, but from teacher's drawing.

9. Make colored product map, showing forest products, grain, livestock, minerals, coffee, rice.

10. Difference between North and South America, in civilization and industrial prosperity is due in about equal proportions to physical features and to European settlers. Contrast the two continents in physical features. Give briefly history of South America and compare with North America. Tell children of the early civilization of Ecuador and Peru.

11. Study specially Brazil, Argentina and Chile; the other countries may be passed over lightly.

12. From Chamberlain's *How We Are Fed and How We Are Clothed* read, as time permits, *On a Coffee Plantation*, *A Cup of Cocoa*, *A Bunch of Bananas*, *Where the Mackintosh Grows*. For Parallel Reading—*Our American Neighbors*.

EUROPE.

Study Europe after plan similar to that for South America. Children need not draw Europe. The teacher may omit the product map. The general product map of Europe, page 120, and the rainfall maps, pages 26 and 114, of *Grammar School Geography*, may be found useful.

The teacher should give briefly a bird's-eye view of the great historical movements of Europe, from Egypt to Greece, Greece to Rome, Rome to the nations of modern Europe, from Europe to America. As the more important nations are studied touch briefly upon their history and place in the world's progress. This work should be given orally and children not required to learn it, as its aim is simply to awaken historical interest. It should not take much time.

Study Europe in the text-book.

ASIA.

Treat Asia in similar manner, putting special stress on *Physical Geography*, India, China and Japan and Siberia. Other parts of Asia may be passed over lightly or omitted.

AFRICA AND AUSTRALIA.

If the work seems too crowded, these two continents may be omitted, as they will be taken more fully in succeeding grades.

Fine print, except review questions, may be taken or omitted at the discretion of the teacher. Parallel Reading, *Our American Neighbors*, and *Modern Europe*. If time permits, read from Chamberlain's *How We Are Clothed*, *Diamonds*.

SIXTH YEAR.

The main work of this year will be the study of the United States in the Grammar School Geography.

The teacher may enlarge maps on pages 26 and 27, explain their meaning and keep them for reference with each continent studied.

NORTH AMERICA.

1. Locate North America on the globe with reference to Equator, Tropic and Arctic Circle.

2. Present N. A. in relief on the sand table and study mountains, valleys, slopes from the relief. Do not over-exaggerate relief. Draw elongated profiles of the relief.

3. Tell facts of ocean currents and winds pertaining to N. A. Do not explain winds and currents. Study from the map winds and ocean currents, pages 26 and 27.

4. Study rainfall map, page 46.

5. Compare winds and currents, rainfall map and relief map; where will there be most rivers? In what directions will they flow? Now look at wall map. Test conclusions.

6. The class is now ready for the general study of N. A., pages 45 to 49.

BROAD STUDY OF THE UNITED STATES.

Before studying our country in sections give a broad survey of it as a whole.

Then as each section is studied, its relations to other sections and to the whole will be clearly seen.

Continue to apply on a large scale the principle of division of labor. (See previous grades.)

From previous study review climate, drainage and soil of U. S., dividing it into natural regions.

Make product map of the U. S., using colored crayons. Give pictures of life and industry of each section. Show how each section is best suited to its product and how other things are obtained by exchange. Make distinction between raw material

and manufactured goods. Show how power is obtained for manufacturing, largely now from steam and electricity instead of water power. What goods are shipped as raw material, and what as manufactured? Show necessity for trade centers in product regions. What advantage has each for transportation and manufacture? Which are chiefly manufacturing and which distributing points? Put into map on blackboard important railroad lines connecting trade centers. How connected by water?

In outline map, children should be able to point to any State named or name any State pointed to. They need not learn boundaries, need not learn capitals unless important as trade centers. They should be able to tell from memory in what product region or regions each State is located, but should not learn list of exports and imports for each State.

Children need not memorize figures or statistics regarding products. In the colored product map each product is indicated in the region in which it is dominant; the color does not indicate that nothing else is produced within that region. Product regions often overlap.

The following colors are suggested for product maps; others may be adopted as needed: Cotton and rice, white; grains, yellow; grazing, light green; forest, dark brown; manufactures, light gray; coal and iron, black; other minerals, red brown; tobacco, sienna brown; fish and oysters, blue; wool, blue white; oranges, orange; other fruits, pink; dairy products, white streaked; petroleum, dark gray.

The class will now study from the book, pages 49 to 62.

STATES BY GROUPS.

After this broader survey of U. S., States may be taken by groups as presented in the book. As each group is studied its relation to the whole will be better seen. From the product map it will readily appear where New England secures its raw material for manufacture and where it finds its markets; where the Mississippi Valley sells its breadstuffs and meats and where it secures its manufactures. Keep these broader relations in mind, using details to impress general principles. Children may read all the text, but should not commit it to memory. They should know how to use text and maps for reference in case of need. The fine print need not be learned; some minor details in the coarse print may be omitted. Take only the leading cities and

occupations in each State or section. A few examples will illustrate. The book describes thirty-eight cities in New England. Do not have all these learned. Instead impress upon the minds by parallel and supplementary reading a great trade center (Boston), a manufacturing city (Lowell), a lumbering city (Bangor), a fishing center (Gloucester). Vivid pictures of these will remain long after names are forgotten. Instead of memorizing what is said of the seven cities of Pennsylvania, give a few graphic word pictures of its coal and iron industries. No amount of hard work on the part of the teacher can make children remember long and dry statements of facts about seven cities of Illinois, but a good description of the great stock yards, a grain elevator and a wheat farm will make a lasting impression. In Texas omit less important cities and the minor occupations, but bring out strongly in the supplementary reading cotton raising, grazing and the great oil wells. In Colorado, gold mining, the great trade centers of that region and the clear, pure air are the important topics. In the State of Washington the child should have impressed upon his mind the magnificent forests and the rapid growth and outlook of the metropolis of Puget Sound.

A SIXTH GRADE

Take to Northern Section, page 66, preceded by brief review of California.

Teach Atlantic Plain, Appalachian Mountains, the Central Lowland, the Rocky Mountain Highland from relief map. The children need not learn the text in the book. Teach the Pacific Coast region from relief map and book. Study Production, page 57, in connection with the product map. Do not have children memorize mere facts.

Read to the class, if time permits, from Chamberlain's *How We Are Clothed: Leather and Its Uses, A Spool of Thread, Needles, Pins, Sewing Machines, What the Buttons Told.*

B SIXTH GRADE.

Take to countries north of United States, page 93. Take broad view of the industries of the United States and of its domestic commerce. (See Supplement to the Geography, Maps II to XI.) Looking at the product map, what articles do we produce in excess of home needs? Where do these find a market?

What important articles do we not produce? From what countries are they imported? What great trade centers are built up by this foreign commerce? What are their special facilities for trade? The study of cargoes from the shipping news will be of great value in impressing our foreign commerce.

Parallel Reading for the Sixth Year will be found in Carpenter's North America and Tarr and McMurray's Geography, Book II. Good supplementary reading is contained in Our Own Country and King's Picturesque Geographical Readers.

Read to the class, if time permits, from Chamberlain's How We Are Clothed: The Cotton Fields, Woolen Cloth and Clothing, The Work of the Silkworm, The Shoemaker's Story, How Hats Are Made, A Pair of Gloves, Gold.

SEVENTH YEAR.

The work of this year will be the study of our American neighbors (Canada, Mexico and Central America, Cuba, South America), Europe and Asia.

A SEVENTH GRADE.

Follow the same general plan as used for United States for the study of other countries of North America.

Compare government of Canada with United States. Explain "local self-government." How does this keep Canada loyal? England learned the lesson of local self-government for her colonies by the American Revolution. What would the result have been had England granted local self-government to her thirteen colonies? Correlate with history. Present through talks and parallel reading. Do not give additional matter to be memorized.

In similar manner contrast government of Mexico with United States. The difference in success of the two republics is largely a difference of race. The life of President Diaz is full of thrilling incidents. If time permits, this would be an interesting subject for biographical composition. The mere telling of the story to the children will appeal strongly to the heroic in them.

Read pages 100a to 100d.

In taking up South America, follow the outline below.

SOUTH AMERICA.

1. Present first on globe in relation to Equator, Tropics, to oceans and to other continents.

2. Show South America in relief on sand board. Have children study and describe its form and surface. Compare with North America. Cut the sand map so that the profiles will show slopes. Draw elongated profiles on blackboard.

3. *Tell facts* about heat, winds and ocean currents of South America. Do not explain.

4. Present wind, temperature and rainfall maps on blackboard (page 104).

5. Compare these with relief map.

6. Where would you expect most rivers, fewest rivers, longest and largest rivers, shortest rivers? Show wall map to confirm or correct opinions. Tell children about the size of the Amazon. ("Afloat in the Forest" contains good description.)

7. Result of physical conditions on soil and vegetation.

8. Train children to make free-hand sketch of South America, putting into each map, in addition to coast line, mountains and rivers, the Equator, Tropics, ocean currents and prevailing winds. Children draw not from book or wall map but from teacher's drawing.

9. Make colored product map showing forest products, grain, livestock, minerals, coffee, rice.

10. Difference between North and South America in civilization and industrial prosperity is due in about equal proportions to physical features and to European settlers. Contrast the two continents in physical features. Study history of South America from a text-book. Supplement by outside reading. Compare with North America. Tell children of the early civilization of Ecuador and Peru.

Refer to Chamberlain's *How We Are Fed*; read, *On a Coffee Plantation*, *A Cup of Cocoa*, *A Bunch of Bananas*.

Compare product maps of North and South America. What things do we receive from South America? What do we send to South America? In what do we compete with Europe in South American markets? (Manufactures.) In what do we compete with South America in European markets? (Grain and grazing products.) How is this commerce carried on?

After this broad study of South America the class is ready for the text. This is to be used in the manner suggested for sixth year.

Bolivar is a striking figure in the history of South America. If time permits, study this character, contrasting with Washington.

EURASIA.

Find on the globe and note north and south, east and west extent. Study rainfall and temperature and ocean currents, but do not explain causes. Eurasia need not be modeled in sand, as children are now able to interpret map forms. Show a printed relief map (Frye's Geography) and be sure that children can interpret the physical map.

Be sure the children understand the meaning of maps on page 114. Teacher need not make colored product maps of Eurasia. Children can now interpret printed page without such aids.

Study Eurasia from the text, page 113-117.

Parallel Reading, Our American Neighbors (borrow from 5th grade), North America (borrow from 6th grade), Tarr and McMurry's Geog., Book III, and Carpenter's South America.

B SEVENTH GRADE.

EUROPE.

Give as much attention to the history of Europe as time will permit. (See Fifth Grade.) The purpose is not to memorize facts of History, but to awaken historic interest. Many of the children will not attend high school, and so will miss systematic study of European history; but interest awakened in Geography may lead to subsequent reading. It may be possible here to awaken some interest in literature and art.

It is not necessary to make relief or product maps, though colored crayons might perhaps impress the products of certain sections. Products may be somewhat generalized as on page 120.

Tell the facts of prevailing winds, etc., and let children explain climate of different parts of Europe. Contrast with United States.

Study the text for Europe, using the fine print for reading matter, the large print for study and vivifying with concrete pictures and good descriptions from parallel and supplementary reading. Try to bring children into vital touch with life and conditions of the old world. The Minor Balkan States may be read, not studied.

Make clear the division of labor among communities according to natural resources or advantages, and the necessity of exchange resulting from such high specialization. Bring out European trade with North and South America. Contrast conditions of life in European countries with conditions in our own country. Contrast governments with government of United States. In what respects is United States superior and to what does it owe its superiority?

Asia has been put into A Eighth Grade in order that much time may be given to Europe. Europe stands next in importance to North America.

EIGHTH YEAR.

The work of this year will include a somewhat careful study of Asia, Africa, Australia, and the Islands of the Pacific; a study of California and its commercial relations; a brief survey of the commercial geography of the world, and of physical geography.

A EIGHTH GRADE.

ASIA.

Relief and product maps for Asia need not be made, though graphic illustrations with colored crayons may sometimes be useful. Make clear the facts of physical geography necessary to understand the climate of Asia. Give as much of the history of the great peoples of Asia as time will permit.

Use the large print for study, read the fine print. Read Afghanistan, Baluchistan, Persia, Indo-China, but do not learn.

Emphasize our commercial relations with China and Japan. Explain the "Eastern Question," and the question at issue between Russia and Japan.

Parallel reading will be found in *Toward the Rising Sun*, *Under Sunny Skies*, *Northern Europe*, *Modern Europe* (borrow from Fifth Grade), *Carpenter's Europe* and *Carpenter's Asia*.

AFRICA.

Study wind, current and rainfall maps with reference to Africa. Compare rainfall map of Africa and South America. Explain the difference. Compare the Mississippi, the Amazon, and the Nile with reference to length, volume of water, tributaries. Give reasons. Compare North Central Africa, Mississippi Valley, Amazon Valley, with reference to rainfall, climate, vegetation, etc. Contrast Africa north of the Equator with Africa south of the Equator. Reasons.

Interest children in the ancient history of Egypt. Bring out recent modern progress in South Africa.

Give some account of great African explorers. From Africa's recent modern development judge of its future.

Parallel reading from Tarr and McMurry's Geog., Book III, and Carpenter's Africa. Good supplementary reading will be found in Book VII of The World and Its People Series, Views in Africa.

AUSTRALIA AND ISLANDS.

Make a careful study of Australia, its physical features, its climate, peculiar animals and plants, its industries, its history, people and government.

Contrast the constitution of Australia under its recent Federation (local self-government) with that of United States.

Bring out the social and industrial conditions of New Zealand.

Bring out the rapid development of Australia and New Zealand and their rising importance.

Parallel Reading—Carpenter's Australia and Tarr and McMurry's Geography, Book III. Australia (The World and Its People Series) contains much interesting matter on the islands of the Pacific.

CALIFORNIA.

Make a thorough study of California, giving special attention to its industries and commerce. Trace the products of California to the markets of the world. This prepares for a general review of the industrial and commercial geography of the world. Enlarge this subject as much as time will permit. Show division

of labor in its largest relations—what each nation does to meet the world's needs, and how these commodities are exchanged.

Use colored product maps of the world as far as possible, showing how success or failure in one part of the world affects other parts; how failure of wheat crop in Argentina raises price of wheat in United States. Refer to commercial maps in the appendix of Geography, Adam's Commercial Geography and Trotter's Geography of Commerce.

Fairbank's California contains much information in most convenient form. Take text on California in back of Geography, omitting fine print at discretion of the teacher.

B EIGHTH GRADE.

This term will be given to the study of Physical Geography. The children have learned many of the facts of Physical Geography, and have applied them in the study of the continents, but have not had explanations. Use the Grammar School Geography, pages as a text, referring, where fuller statements are needed, to Tarr's Physical Geography. This term's work will give a more complete view of the earth as a whole, and will constantly refresh in the minds of the children what they have learned in previous grades. It will lay a foundation for the sciences to follow in the High School.

HISTORY AND CIVICS.

HISTORY.

PURPOSE.—The Course of Study in United States History has been outlined for the purpose of developing an interest in the history of human affairs, particularly as that history has developed on the American Continent. To this end an attempt will be made to give the children a knowledge of and a feeling for the personalities, events and movements of American History.

METHOD.—Upon the interests of children as we find them we must graft a more mature historical interest. Children are interested in biographical stories, consequently the work of the Fourth Grade, where History first appears as a regular subject, should be an introduction to history through its great men. In the Fifth Grade events and movements can be grouped around the lives and actions of historic personages, and finally, beginning with the Sixth Grade, the larger movements and situations of history may be studied directly, the biographical and narrative elements still being used to vivify the facts learned.

TEXT-BOOKS.—No text-book will be used in the Fourth Grade. In the Fifth Grade *The Introductory History* (California State Series) will be used as a History Reader. In the Sixth, Seventh and Eighth Grades the children will use as a text in their own hands *The New Grammar School United States History* (California State Series). It is not intended that the text-book simply should be studied, but that the *subject* should be studied with the aid of the text-book.

PARALLEL READING.—Each class is supplied with books for Parallel Reading. The five books supplied are to be used by various groups of children in turn, the children reading aloud to the class, or reading and reporting to the class on the material assigned by the teacher. This material is to be treated the same as that obtained from the text or presented by the teacher, being discussed, explained, and, finally, reproduced in the *child's own language*. The history material given in the Parallel Reading forms an excellent basis of fact and feeling for composition work.

The *aims of history* rather than composition should be dominant in the treatment of the material during the history period. (See PARALLEL READING.)

SUPPLEMENTARY REFERENCES.—In the Sixth, Seventh and Eighth Grades Fiske's *History of the United States* and Sheldon-Barnes' *Studies in American History* may be used as supplementary text-books for reference.

The purpose of Parallel Reading and Supplementary References is not so much to add new facts of history, but rather to *give life and interest* to those contained in the text.

TRAINING TO STUDY.—History, because of the amount of reading done by the child, affords one of the best opportunities for teaching children to study. To study a subject means to discriminate between facts of greater and less importance and to relate these ideas to one another. Many lessons, particularly in the last three grades, should be given with open books or outlines, noting that the large or main topics are the epitomes of whole movements, and that the lesser or sub-topics are epitomes of lesser movements, which grouped together make up the larger movements, or main topics. Children should be taught to find the main thoughts of the paragraphs they read, relating them to each other, finally reproducing in their own language. With open books study maps and pictures.

TOPICS.—Certain parts of history are more important than other parts. Consequently some parts need to be studied, some merely read, and some entirely omitted. Large movements, and the causes and results of great events are most important, while the details of wars and battles and minor events are of least importance. Many military, political, legal and economic facts of history are too difficult for the comprehension of children. Where such is the case the children should merely read, the teacher summarizing for them at the close. The work of the Sixth, Seventh and Eighth Grades is given under each grade by main and sub-topics, arranged with difficulties of the text-book and the above ideas in mind. These topics represent the central ideas to be understood and remembered, the details given in the text and other books are read only to make these central ideas clear. The details of battles, campaigns, wars and the details of most political, legal and financial measures being too difficult for the child to comprehend in their right relation and significance, should not be studied and memorized. Where these *facts as a whole*

have an important bearing on history, the teacher should summarize their influence and present to the class.

In assigning a lesson, make the assignment by a definite subject or topic, not by a certain number of pages. All reading or study, however broad, should be done to a point.

CIVICS.

PURPOSE.—The purpose of Civics is to give the children definite and concrete ideas and standards of conduct with relation to the affairs of human society, and to give them a knowledge of those forms and functions of government which they need to understand in the exercise of political privileges and duties.

MATERIAL.—The best material for Civics is the concrete biographical material of history, and the personal and civic aspect of history should receive attention wherever the material permits. Certain material is outlined from grade to grade for the convenience of the teacher. As a reference book in the hands of the teacher, use Dole, *The American Citizen*.

A FOURTH GRADE.

The hero tale and history tale have been used in the preceding grades as material for reading and oral language. History as a subject appears for the first time in this grade. The method of instruction is largely that of oral presentation by the teacher and oral reproduction by the pupil, with discussion of the situations involved in the story. The use of some simple historical reading is supplemental to the teacher's oral presentation. The work of this year offers two parallel approaches to the later study of history: *biographical history* and *local history*.

BIOGRAPHICAL HISTORY.—The biographical history will be covered by the stories from American colonial and pioneer life selected from the books here mentioned, or from such other material as the teacher may choose to use for her story telling. Pratt's *Stories of Colonial Children* and *Stories of American Pioneers* are to be used to supplement the oral presentation.

These stories may be read aloud to the class by various children, or read by groups of children and told by them to the class. Reproduction and discussion should follow.

LOCAL HISTORY.—The local history to be studied is that of San Francisco and its immediate vicinity. It should be presented in close connection with the work in home geography. The children may read "The Story of San Francisco" in Sexton's *Stories of California*, pages 169-179. For further material the teacher may refer to Wagner's *Pacific History Stories*, Hood's *Tales of Discovery on the Pacific Slope*, Powers' *Historic Tales of the Old Missions*.

All schools should not study the same local history topics. The spots of historic interest are not equally known and available to the various children, nor are they equally significant in the history of San Francisco. Two lists of topics taken from Mrs. O'Neal's *Topics for Local History Work* are suggested. The first should be used by all schools. From the second, four or five particular topics should be selected by particular schools, as the material for study and observation is within reach of the school or of peculiar significance to that portion of the city.

TOPICS FOR GENERAL USE.

1. Indians who once lived here; their former modes of life.
2. The Spaniards; where from, and reasons for coming to this peninsula.
3. The Mission Dolores; location and description of church and cemetery.
4. Conditions (geographic, climatic) which made San Francisco a favorable place for settlement.
5. Houses of Spaniards; of what constructed, how built and how covered.
6. Occupation of the people who came here first. Small settlements.
7. The Presidio; location and present use; meaning of word; how used by Spaniards.
8. The American settlement at Yerba Buena; location and occupation of the people.

9. Telegraph Hill, Russian Hill, Rincon Hill and Bernal Heights; manner in which names were obtained and use in early days.

TOPICS FOR SELECTION.

1. Portsmouth Square; a few of the historical scenes of which it was the center.

2. Meiggs' Wharf and Long Wharf; their importance in early days.

3. Mission Creek and Potrero; situation and use.

4. Location of first house built by an American (Captain Richardson); location of American settlement.

5. Population in 1842 (50) and in 1860 (50,000); cause of the rapid increase; the effect of the discovery of gold on the development of the city.

6. Streets named for pioneers; streets which have been built on land filled in and where the bay formerly came; change in the water front.

7. Old houses now standing that came around The Horn.

8. Opening of Market street; steam paddy; leveling of the sandhills; development of the Western Addition; horse cars, cable cars and electric cars.

HOLIDAYS.—Continue the observance, in some simple manner, of such days as Thanksgiving, Christmas, Washington's Birthday, Lincoln's Birthday, Decoration Day and Admission Day.

CIVICS.—Wherever the history material permits, emphasize the personal qualities manifested in the lives of great men which have contributed to the country's welfare.

Bring to the attention of the children by talks and discussions some of the easily understood principles of government, such as

1. The meaning of the word "government" and the necessity for some form of it.

2. The family and its government.

3. The schoolroom and its government.

4. The playground and its government.

See Dole, *The American Citizen*, Chapters I, II, III.

B FOURTH GRADE.

The method of history instruction in this grade is largely that of oral presentation by the teacher and oral reproduction by the pupil, with discussion of the situations involved in the story. The reading of simple historical stories by the children is supplemental to the teacher's oral presentation. The work of this grade continues the two parallel approaches to the later study of history: *biographical history* and *local history*.

BIOGRAPHICAL HISTORY.—The biographical history will be covered by the stories from American colonial and pioneer life selected from the books here mentioned or from such other material as the teacher may choose to use for her story telling. Eggleston's *Stories of Great Americans for Little Americans* and Eggleston's *Stories of American Life and Adventure* are to be used to supplement the oral presentation. These stories may be read aloud to the class by various children, or read by groups of children and told by them to the class. Reproduction and discussion should follow.

LOCAL HISTORY.—The local history to be studied is that of California, with such Pacific Slope history as is necessary to give a proper setting. It should be presented in close connection with the study of the geography of the State. The children should read Sexton's *Stories of California*. This may be done as with the biographical history, by allowing a group of children to read a single story, presenting it to the class. The teacher will find further material for her own presentation in Winterburn's *The Spanish in the Southwest*, Wagner's *Pacific History Stories*, and Powers' *Historic Tales of the Old Missions*.

The following topics are suggested and should be among those receiving attention:

1. Voyages of Balboa, Magellan and Drake.
2. Cabrillo's discoveries along the Pacific Coast.
3. The discovery of San Francisco Bay.
4. The Indians of California; their former modes of life.
5. The founding of the Missions. (Indicate location on an outline, sandboard or wall map, and on the map of the State Elementary Geography, page 28. Use pictures of a few Missions.)
6. The Mission Indians; manner of living; treatment by the Spanish.

7. Towns founded by the Spanish about the Missions; mode of life among the early Spanish families.

8. How California became a part of the United States; capture of Monterey and San Francisco.

9. Occupation of Americans who came before 1848; trade in hides, tallow, etc.

10. Discovery of gold; mining excitement; ships to San Francisco and rush to the mines; rapid growth of the city; mixed population; lawlessness; vigilance committees.

11. The Donner party as typical of crossing the plains.

12. Other ways of coming to California in the early days.

13. The opening of the first transcontinental railway.

14. The change from a mining to an agricultural State.

HOLIDAYS.—Continue the observance, in some simple manner, of such days as Thanksgiving, Christmas, Washington's Birthday, Lincoln's Birthday, Decoration Day and Admission Day.

CIVICS.—Wherever the history material permits, emphasize the personal qualities manifested in the lives of great men, which have contributed to the country's welfare.

Continue the talks and discussions on some of the easily understood principles of government, such as—

1. The idea of a city and its government.

2. The idea of a State and its government.

3. The idea of the government of our country.

4. Titles and names of the chief officer in each of the three.

Correlate with geography. Consult Dole's *The American Citizen* for ideas as to this work.

A FIFTH GRADE.

In the preceding grades the work has been largely biographical.

In this grade the work is to take on a larger range of facts and events. The biographical element is still prominent, but

woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than before. The *Introductory History* (California State Series) is to be bought and used through the story of Washington, page 186. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text, though pupils should be able to reproduce, orally, the substance of the stories. The work of the teacher should be to bring out and reinforce the pictures drawn, so as to enrich the mind of the child.

Moore's *Pilgrims and Puritans* is to be read by the children as parallel reading. Have four or five children read a story in Moore and then tell it to the class, or have each one of a group read part of the story aloud to the class. The teacher may supplement orally from any other material she may choose.

Correlate the history work with that of geography by looking up the localities mentioned.

CIVICS.—Wherever possible, get a standard and ideal of conduct from the life of the great Americans treated in the history reader, such as William Penn, Benjamin Franklin and George Washington.

Discuss the necessity of government in connection with the story of John Smith, the Landing of the Pilgrims, and others. In connection with the colonies, discuss, in simple terms, local government as found in the colonies and centralized government as found in the King and Parliament.

B FIFTH GRADE.

In the history work of this grade the biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than in the fourth grade. The *Introductory History* (California State Series) is to be bought and completed from page 187. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text. The work of the teacher should be to bring out and reinforce the pictures drawn, so as to enrich the mind of the child.

The amount of oral presentation of history stories by the teacher, the characteristic method of the fourth grade, is much

lessened in this grade, and the amount of parallel reading is increased. Moore's *From Colony to Commonwealth* and Blaisdell & Ball's *Hero Stories from American History* are to be read by the children as parallel reading. The stories in these books may be read aloud, or read and told to the class, by various groups of children.

Correlate the history work with that of geography by looking up the localities mentioned.

CIVICS.—Wherever possible, get a standard and ideal of conduct from the lives of great Americans treated in the history reader, such as George Washington, Daniel Boone, Andrew Jackson and Abraham Lincoln.

In connection with the chapter on the Revolution, discuss the following topics in simple form:

1. Who makes the laws and by what right?
2. The right of the King and Parliament to govern America.
3. The state governments of the free colonies and why they joined in a national government.

A SIXTH GRADE.

With this grade a more systematic study of American History begins. In the previous grades the biographical element was dominant. Now the larger movements of history are studied directly as such, though biographical and narrative material are still to be used to make the material studied real and interesting.

The work of this grade will cover the following movements or large topics:

- I. Europe finds America.
- II. Spain takes possession of the new world.
- III. England rivals Spain and plants herself on the Atlantic Coast.

The *New Grammar School U. S. History* (California State Series) is used for the first time in this grade. The topics cover the first fifty-nine pages. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *Colonial Children*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of story.

Fiske's *History of the United States*, Sheldon-Barnes' *Studies in American History*, and Hittell-Faulkner's *Brief History of California* may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

- I. Europe finds America (Fiske, 19-37), (Sh.-Brns., 19-31), (Hittell, 1-4.)
 1. The problem of the Trade Route to the Indies (2, 3).
 2. Columbus sails West to reach the East and finds America (4).
 3. The Cabots follow Columbus for the English (5).
 4. Vasco da Gama goes around Africa to India (5).
 5. Amerigo Vespucci gives his name to America (6).
 6. Balboa discovers the Pacific Ocean (7).
 7. Magellan's Ships sail round the World (8, 9).
- II. Spain takes Possession of the New World (Fiske, 40-46), (Sh.-Brns., 31-41), (Hittell, 5-31, 45-67).
 1. Cortes conquers Mexico (11).
 2. De Vaca leads Narvaez's Men across the Continent (11).
 3. Fray Marcos and Coronado seek the Seven Cities of Cibola (12).
 4. De Soto leads the Spaniards across the Mississippi (13).
 5. The Spanish establish Missions and Colonies (13, 14).
- III. England rivals Spain and plants herself on the Atlantic Coast (Fiske, 59-152), (Sh.-Brns., 41-45, 57-61, 65-73, 77-87, 92-100), (Hittell, 32-44).
 1. Sir Francis Drake sails up the Pacific Coast (15).

2. Sir Walter Raleigh and others try to colonize America (16-18).
3. The English start a Colony in Virginia (19-24).
4. The Dutch and Swedes plant Colonies that interfere with England's control (27-29).
5. The Planting of New England.
 - a. Plymouth (30-34).
 - b. Massachusetts Bay (35-38).
 - c. New Hampshire and Maine (39).
 - d. Rhode Island (40, 41).
 - e. Connecticut (42).
 - f. New Haven (43).
 - g. The United Colonies of New England (44, 45).
6. England extends her Colonies at the South.
 - a. Maryland (25, 26).
 - b. The Carolinas (47).
7. England unites her Colonies by annexing the New Netherlands (48).
8. English Colonization continues.
 - a. New Jersey (49).
 - b. Pennsylvania (50).
 - c. Delaware (51).
 - d. Georgia (52).
9. The Thirteen English Colonies (53).

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The devotion of Columbus to a scientific idea.

The missionary work of the Spanish priests among the Indians.

The religious devotion of the Pilgrims.

The religious tolerance of Roger Williams.

The various forms of government represented in the colonies and the mother countries might be brought out, discussing particularly the monarchical form of government.

B SIXTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

IV. France, the Third Rival, takes Control of the St. Lawrence and the Mississippi.

V. The Struggle between the English and the French.

VI. The Disagreement of the English Colonies with the Mother Country.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from page 60 to page 123. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *Camps and Firesides of the Revolution*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* and Sheldon-Barnes' *Studies in American History* may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

IV. France, the Third Rival, takes Control of the St. Lawrence and the Mississippi (Fiske, 50-55), (Sh.-Brns., 62-64, 74-77, 87-91).

1. Cartier explores the St. Lawrence River (54).
2. Champlain makes the First Settlement (54).
3. Marquette and Joliet add more Territory to New France (55).
4. La Salle adds Louisiana (56).

V. The Struggle between the English and the French (Fiske, 155-176), (Sh.-Brns., 101-113).

(Merely read the description of the Indians, 57-62.)

1. How the French got along with the Indians (63, 64).

2. How the English got along with the Indians (65-70),
3. First Conflicts between the English and the French along the Border (71-73).
4. The French Tighten their Hold on the Mississippi and Ohio Valleys (74, 76, 77).
5. The Men of New England Capture Louisburg (75).
6. Washington's First Public Service (78, 80, 82).
7. Braddock Meets Defeat at Fort Duquesne (83-86).
8. Wolfe Defeats Montcalm at Quebec (87-89).
9. France is Driven Out of America (90).

VI. The Disagreement of the English Colonies with the Mother Country (Fiske, 181-203), (Sh.-Brns., 125-147).

(Merely read the description of "Life in the Colonies," 91-100),

1. How the Mother Country Governed the Colonies (101-103).
2. The Acts of Trade and Navigation (104).
3. The Quartering of Troops and Trial without Jury (107-108).
4. The Stamp Act (109-119).
5. The Tax on Tea (120-124).
6. Parliament Punishes Massachusetts (125).
7. The Colonies Protest in Continental Congress (126-128).

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The treatment of the Indians by the French and English.

The employment of savages in civilized warfare.

The patient resistance of the colonists to the mother country.

The difference between the democratic and monarchical forms of government as brought out in the assemblies of the colonists and the imposed rule of Royal governors should be explained. The resistance of the colonists is to be explained on the basis of Englishmen fighting for acknowledged English rights.

A SEVENTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

VII. The Struggle for Independence.

VIII. The Struggle for a Government.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from page 126 to page 205. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *Camps and Firesides of the Revolution*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* and Sheldon-Barnes' *Studies in American History* may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

VII. The Struggle for Independence (Fiske, 203-241), (Sh.-Brns., 148-189).

1. The First Resistance: Concord and Lexington (129, 130).
2. The Battle of Bunker Hill (133).
3. Washington takes Command of the Army (131, 132, 134-136).
4. The Declaration of Independence (137, 138).

5. The Struggle for Possession of the Center.
 - a. The Retreat of Washington (139-142).
 - b. The Campaign and Surrender of Burgoyne (143-145).
6. The Gloomiest Period of the War.
 - a. The Winter at Valley Forge (146).
 - b. The Treason of Arnold (154).
7. Events which encouraged the Americans.
 - a. Franklin gets France to help America (147).
 - b. The Victories of Paul Jones (158, 159).
8. George Rogers Clark saves the Northwest (151).
9. The War at the South ends in the Surrender of Cornwallis (153, 155-157, 160-162).

(Topics 5, 6, 7, 8, 9 should be merely read by the children, the teacher summarizing the result of the various campaigns and events at the proper places).

VIII. The Struggle for a Government (Fiske, 246-256), (Sh.-Brns., 196-215).

(Merely read Chapter XIV, Our Country in 1790 (185-208), as supplementary to the study of the following topics:)

1. The Colonies become States (163).
2. The Weakness of the Articles of Confederation (164, 165, 169-173).
3. Making the Constitution (174-181).
4. Organizing the New Government (182-184, 209-212).
5. Paying its Debts (213-224).
6. Enforcing its Authority (226).
7. The Rise of Political Parties (225).

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The patient endurance of Washington at Valley Forge.

The treason of Arnold at West Point.

The evil effects of partisanship in Congress.

The sacrifice of special interest to general good in the Constitutional Convention.

A presentation and discussion of the main points of our Federal Constitution may be best made here in connection with the attempt to form a government. The following outline might be studied in connection with a reading of the Constitution:

THE NATIONAL GOVERNMENT.

I. *Congress.* (Legislative Department.)

1. Meetings.

- a. First Monday of every December.
- b. Extra sessions.

2. Consists of:

- a. Senate,—Two Senators from each State; elected for six years by the State Legislatures.
- b. House of Representatives,—One representative for every 154,000 people; elected for two years by the people.

3. Chief Powers:

- a. To make laws.
- b. To coin money.
- c. To lay and collect taxes.
- d. To declare war.
- e. To provide for and maintain an army and a navy.
- f. To fix the standards of weights and measures.
- g. To grant patents and copyrights.

II. *Executive Department.*

1. Chief officer,—President, elected by electors chosen by the people, each State being allowed as many electors as it has Congressmen.
2. President's Cabinet.

3. Chief Duties of President:

- a. To sign or veto bills.
- b. To send an annual message to Congress.
- c. To make treaties, with consent of the Senate.

III. *Judicial Department.*

1. U. S. Supreme Court, consisting of the Chief Justice and eight Associate Justices, appointed by the President, with consent of the Senate, for life or during good behavior.

B SEVENTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

IX. The Struggle for Commercial Independence.

X. The Nation grows toward the West.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from p. 206 to p. 293. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *How Our Grandfathers Lived*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* and Sheldon-Barnes' *Studies in American History* may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

IX. The Struggle for Commercial Independence. (Fiske, 261-301) (Sh.-Brns., 229-236).

(Merely read Chapter XIX, "Progress of Our Country Between 1790 and 1815," as supplementary to the study of the following topics):

1. Washington keeps the Nation Neutral in the Troubles between France and England (227-231).

2. Adams and the Trouble with France (234-238).
3. Jefferson and the Republican Reforms (241-243).
4. France and Great Britain try to punish each other at America's Expense (250-254, 256).
5. Jefferson's Policy of Protecting American Interests (255, 257-267).
6. The Second War with England (263-272).

(Children merely read, teacher summarizing.)

X. The Nation grows toward the West. (Fiske, 309-342)
(Sh.-Brns., 215-220, 225-229, 245-254).

1. The Purchase of Louisiana (244, 245).
2. Lewis and Clark explore the Northwest (244-247, 249).
3. Pike explores the Southwest (248).
4. The Three Streams of Westward Emigration (273, 274).
5. The Resistance of the Indians (275, 276, 279).
6. The Settlement of Disputes with Our Western Neighbors (291-300).
 - a. The Boundary Disputes.
 - b. The Monroe Doctrine.
7. The Rising West (301-311).

(Merely read this chapter here, as its important parts will be studied later.)

8. The Highways of Trade and Commerce (312-324).
(Merely read as supplementary to above topics).

Civics.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

Jefferson declines a third term on principle.

The trickery of Napoleon.

The nation refuses to be coerced into paying tribute to the French Directory.

In connection with the discussion of maritime and commercial rights involved in the struggle for commercial independence, speak of international law, the law of nations, its function and development. (See Dole, *The American Citizen*, Chapters XLII. XLIII.)

A EIGHTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the large topic.

XI. The Long Struggle with Slavery.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from p. 294 to p. 418. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *Romance of the Civil War*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* and Sheldon-Barnes' *Studies in American History* may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

XI. The Long Struggle with Slavery. (Fiske, 349-429) (Sh.-Brns., 237-244, 256-370).

1. The Establishment of Slavery in America (23).
2. Slavery in the Colonies (93, 94).
3. Slavery at the Time of the Constitution (168, 177, 195).
4. Invention of the Cotton Gin firmly establishes Slavery (208).

(Topics 1, 2, 3, 4 are reviewed here to properly introduce the slavery question.)

5. The Settling of Western Lands Brings a Struggle over Slavery (307-309).
6. The Missouri Compromise (310, 311).
7. Industrial Changes make the North and South hold Differing Opinions on Internal Improvements, Tariff and Slavery (328, 333).
8. Jackson Denies a State's Right to Nullify (334-336).
9. The National Anti-Slavery Movement Begins (348-351):

(Certain portions of Chapter XXIII have been omitted from this outline for study, as they are too difficult. If the teacher desires, they may be read at this or some other convenient point and summarized by the teacher.)

(Chapter XXVI may be read, not studied, as descriptive material which shows the widening industrial gap between the North and South.)

10. The Acquisition of New Territory again raises the Question of the Extension of Slavery.
 - a. Texas secures Independence and comes into the Union (356, 357, 361).
 - b. Oregon becomes a Territory (358-360, 362).
 - c. The Mexican War adds New Mexico and Upper California (363-372).
11. The Political Parties try to dodge Slave Extension as an Issue (373-376).
12. The Discovery of Gold in California forces the Question of Slavery on Congress (377, 378).
13. The Compromise of 1850 (379-383).
14. The Territory of Nebraska again opens the Slavery Question (384-386).
15. The Struggle to make Kansas Free or Slave (387-389, 397).
16. The Slavery Question breaks up Old Party Lines (390-394, 400, 401).

17. The Supreme Court deals with the Slave Question (395, 396).
18. The Lincoln Douglas Debates (398).
19. John Brown's Raid into Virginia (399).
20. Abraham Lincoln is elected President: His Policy (402, 424).
21. Why the States Seceded (419-421).
22. The Final Attempts at Compromise (422, 423).
23. The War for the Union, 1861-1865.
 - a. The War on the Land (425-452).
 - b. War along the Coast and on the Sea (453-463).

(Children merely read the material on the campaigns of the Civil War, the teacher summarizing at the proper points.)

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

Clay, the great compromiser, meets both sides half way.

Jackson takes a firm stand on nullification.

John Brown's raid into Virginia.

Under the question of the secession of the Southern States discuss the relation of States to the central government. Treat the function of State government. (See Dole—*The American Citizen*, Chaps. XI, XII.)

B EIGHTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

XII. The Legacy of the Civil War.

XIII. Our Development since the Civil War.

XIV. Our Recent Foreign Relations.

XV. Our Affairs at Home.

XVI. The History of California.

Under XV teach any important current events occurring since the publication of the text. Review the pertinent facts of general American History as the History of California is studied.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from p. 419 to the end of the book. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Mowry's *American Inventions and Inventors*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* and Sheldon-Barnes' *Studies in American History* may be used as supplementary text-books for reference in general American History, and Hittell-Faulkner's *Brief History of California* for the History of California.

The following are the topics for this grade:

XII. The Legacy of the Civil War. (Fiske, 441-448) (376-384).

1. The Cost of the War (464-476).
(Merely read, teacher summarizing.)
2. The Reconstruction of the South (477-484, 494, 495).
(Merely read, teacher summarizing.)
3. The National Finances (496-499).
4. The Right of the Negro to Vote (500-502).
5. The French in Mexico: The Monroe Doctrine (517).
6. The Alabama Claims (518).

XIII. Our Development since the Civil War. (Fiske, 448-471) (Sh.-Brns., 385-403).

1. The New West (488-493).

Day Elementary Schools.

2. The Passing of Old Political Issues: The New Issues (503-516).
3. The Purchase of Alaska (519).
4. The Rise of New Industries in the North and South (520-522).
5. The Growth of the New Northwest (523-528).
6. Our Mechanical and Industrial Progress (529-535).
7. Politics since 1880 (536-561).

XIV. Our Recent Foreign Relations. (Fiske, 471-477).

1. The Hawaiian Revolution (562).
2. The Venezuelan Boundary Dispute (563).
3. The Cuban Question (564-567).
4. The War with Spain (568-575).
5. Disorders in China (576).

XV. Our Affairs at Home.

1. The Money Question (577-579).
2. The Assassination of President McKinley (580).
3. President Roosevelt's Administration (581).
4. The Isthmian Canal (582).

XVI. The History of California (1-18). (Hittell, 1-67).

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The horrible cost of war.

The partisan fight of President and Congress over Reconstruction.

Our humane war for suffering Cuba.

In connection with our industrial and economic development discuss some of the simplest economic principles that have become important in our recent history, such as the division of labor, the law of supply and demand, etc. (See Dole—*The American Citizen*, Chap. XXVIII.)

NATURE STUDY.

INCLUDING MANUAL TRAINING, PHYSIOLOGY AND HYGIENE.

Nature Study trains all the senses. It quickens sense perception. It interests the child in the forces and objects of nature about him. It gives an elementary knowledge of common things.

"Object Lessons" and "Nature Study" have been good, but it is time for the next step in advance. *Naturalize the entire Course of Study.* Make the work concrete. This is real nature study.

We have done much in this direction already. Manual Training, Cooking, Drawing, Music, Physical Culture are Nature Study for they quicken the child's senses, exercise his judgment and promote physical development.

In Manual Training children should learn more than the handling of tools. Wood should be known by smell, taste, color. They should test the qualities which adapt them to their various uses. They should know the source of the various lumbers in the markets and the use of each in the construction of a building. They should be encouraged to observe building operations, and to note the kinds of machinery and tools used. They should be able to read simple plans. Manual Training should shorten any subsequent apprenticeship and not be the source of bad habits subsequently to be corrected.

Cooking offers the opportunity for teaching much elementary science, qualities of food articles, hygienic qualities of various foods. Children should be taught the economic use of fuel in cooking and the economy of time in the preparation of a meal. Sight, taste, smell and feeling may be trained in marketing. Children should often be given articles a little tainted to pass judgment upon them. Not enough sense training of this kind is given, and yet what Nature Study is of greater value than that which trains the nose to detect slightly tainted meat, fish or oysters?

Drawing and Music train ear and eye. Children should be taught to appreciate far beyond their power to perform. Occasionally good singers or players should be invited to the school to entertain the children with classical music. In every community there are numbers of people who will be glad thus to share in the education of the young. Fine works of art should be placed before the class not for critical study but for sympathetic appreciation and enjoyment. One or two pictures brought before a

class at a time are better than a whole gallery, for many things tend only to confuse. Children may be taken to the art gallery or museum for the study of a limited number of things each time.

Flowers, birds, trees, etc., are studies as a basis for drawing and composition. Children should be encouraged to see good proportions in buildings, to observe beauty in all common things—trees, sky, clouds, water, sunset. The beauty of nature is not less important than its truth.

Physical Culture and supervised play in the public playground or the school yard give hard muscles, rosy cheeks and quickened judgment.

Geographical excursions offer some of the best sense training, and the Museum of Geography will give the best means of handling things. (See Geography.)

Some of the best nature work may be done in connection with school gardens. These were started last year, and in some schools were made very effective. It is hoped not only to use part of the school ground (when possible), but in the near future to bring vacant lots into requisition. It is the purpose of the school garden to raise the common food plants. City children know these usually only as they appear in the market or on the table. They see great variety of flowers everywhere, but a hill of potatoes, a head of cabbage, a stalk of corn or ripening grain they never see. They should know these common food plants from the preparation of the soil to receive the seed till the mature product is ready for the kitchen, and the girls should follow it to the dining room. Many lessons may be given on the soil, the germination of seed, development of the plants, insect pests and the means of destroying them without injury to the plants. With the garden growing and interest awakened, only a word or two may often be a lesson.

We have endeavored to make every part of this course concrete and practical. Reading is taught from beginning to end for thought content. Geography begins with observation and follows lines of children's interest. Arithmetic deals with real measurements and with life conditions and problems. History is enriched by parallel and supplemental reading. In Language the child is trained to think and helped to a better expression of his thought. If all these are carried out in the right spirit, the Course of Study will be naturalized and Nature Study will form part of every subject.

Schools which can do more work than is above indicated will find additional study organized grade by grade in the Appendix. This work is made optional with the principal.

PHYSIOLOGY AND HYGIENE.

Practical lessons in Physiology and Hygiene will be given in each of the different grades. This work will be oral, or in the upper grades the children may keep a note book.

HUMANE EDUCATION, MORALS AND MANNERS.

These subjects will be taught from Reading, Literature and History as occasion rises for impressing such lessons.

PHYSIOLOGY AND HYGIENE.

In primary grades give talks on cleanliness and the importance of proper carriage of the body—sitting, standing and walking.

Talks on how to keep healthy, impressing upon children the importance of breathing pure air, of eating wholesome food, and of exercising in the open air.

Try to see that children learn how to play, and encourage them to take an active interest in games.

Books for teacher's desk: *How to Keep Well*, by Albert F. Blaisdell, M. D. *State Series Physiology*.

FIFTH GRADE.

Foods; why necessary, kinds, quantity, cooking, chewing, etc.

Organs and processes of digestion, with effects thereon of stimulants and narcotics.

Books for teacher's desk: *Our Bodies and How We Live*, by Albert F. Blaisdell, M. D. *State Series Physiology*.

SIXTH GRADE.

Absorption and circulation, with effects thereon of stimulants and narcotics.

Respiration and perspiration, with effects thereon of stimulants and narcotics.

The muscular system, structure, uses, hygiene, growth, exercises, etc., with effects thereon of stimulants and narcotics.

Books for teacher's desk: *The Hygiene of the School Room*, by W. F. Barry, M. D. *State Series Physiology*.

SEVENTH GRADE.

1. Habits to avoid (p. 153).
2. Mixed diet beneficial.
3. Regularity in eating and sleeping.
4. Review some of the simple laws of health.
5. Care of the teeth.
6. Care of the eyes.
7. Accidents, dangers, and simple aids to the injured.

Books for teacher's desk: *Our Bodies and How We Live*, by Albert F. Blaisdell, M. D. *State Series Physiology*.

EIGHTH GRADE.

1. The lungs and respiration.
2. Skin and kidneys.
3. Eye and ear.
4. Throat and voice.
5. The nervous system.
6. Review the subject of hygiene.

Books for teacher's desk: *Applied Physiology*, by Frank Overton, M. D.

Very full treatment of the alcoholic and narcotic questions: *State Series Physiology*.

WRITING.

Observe the following schedule, and until further notice, use Curtiss's Semi-Vertical Copy Books, I-VI

A FIRST GRADE—Give movement exercises with crayon and pencil preparatory to writing.

B FIRST GRADE—Practice on paper with movement exercises.

A SECOND GRADE—Book I.

B SECOND GRADE—Book II.

A & B THIRD GRADE—Book III.

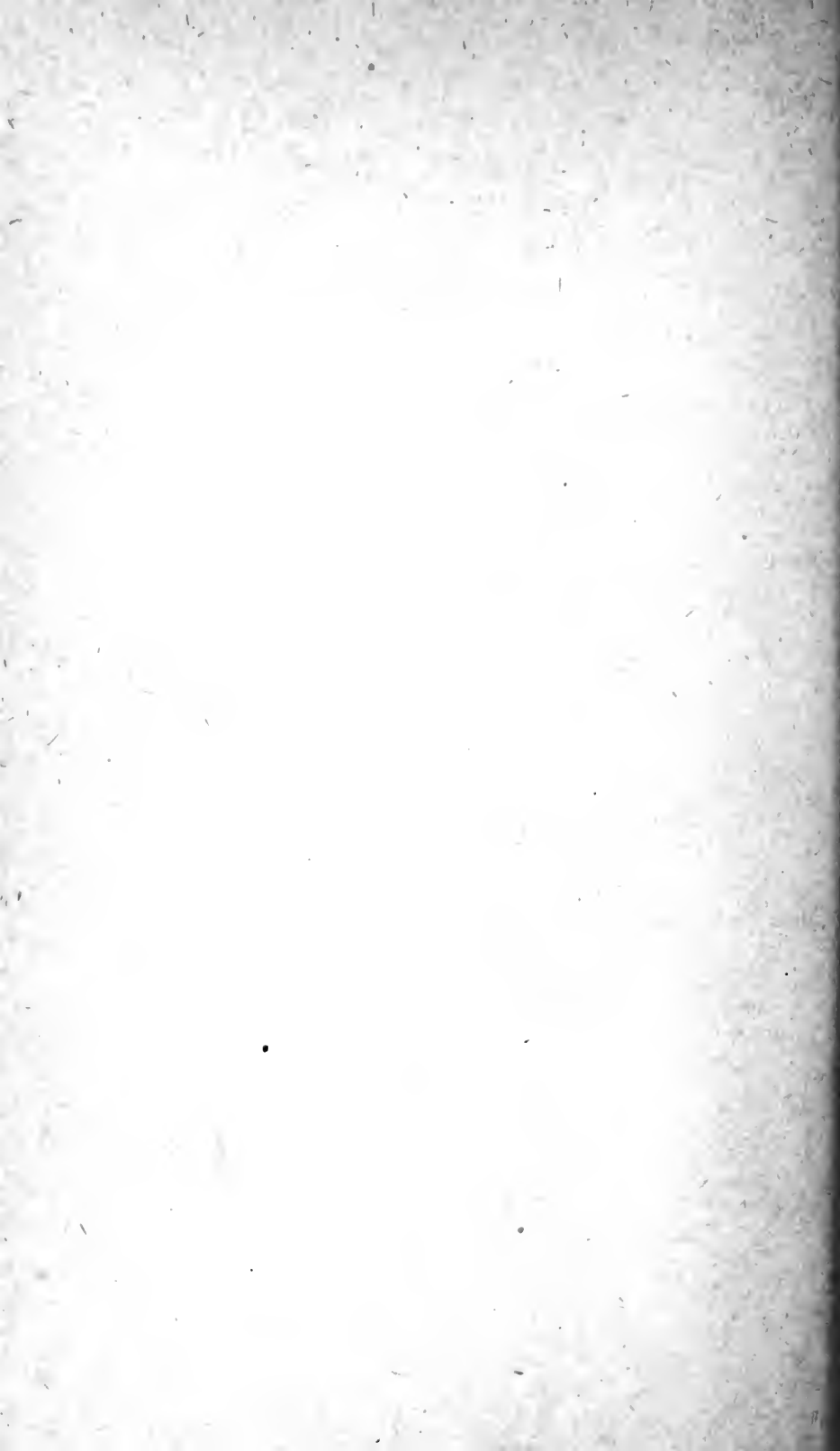
A & B FOURTH GRADE—Book III.

A & B FIFTH GRADE—Book IV.

A & B SIXTH GRADE—Book V.

A & B SEVENTH GRADE—Book VI.

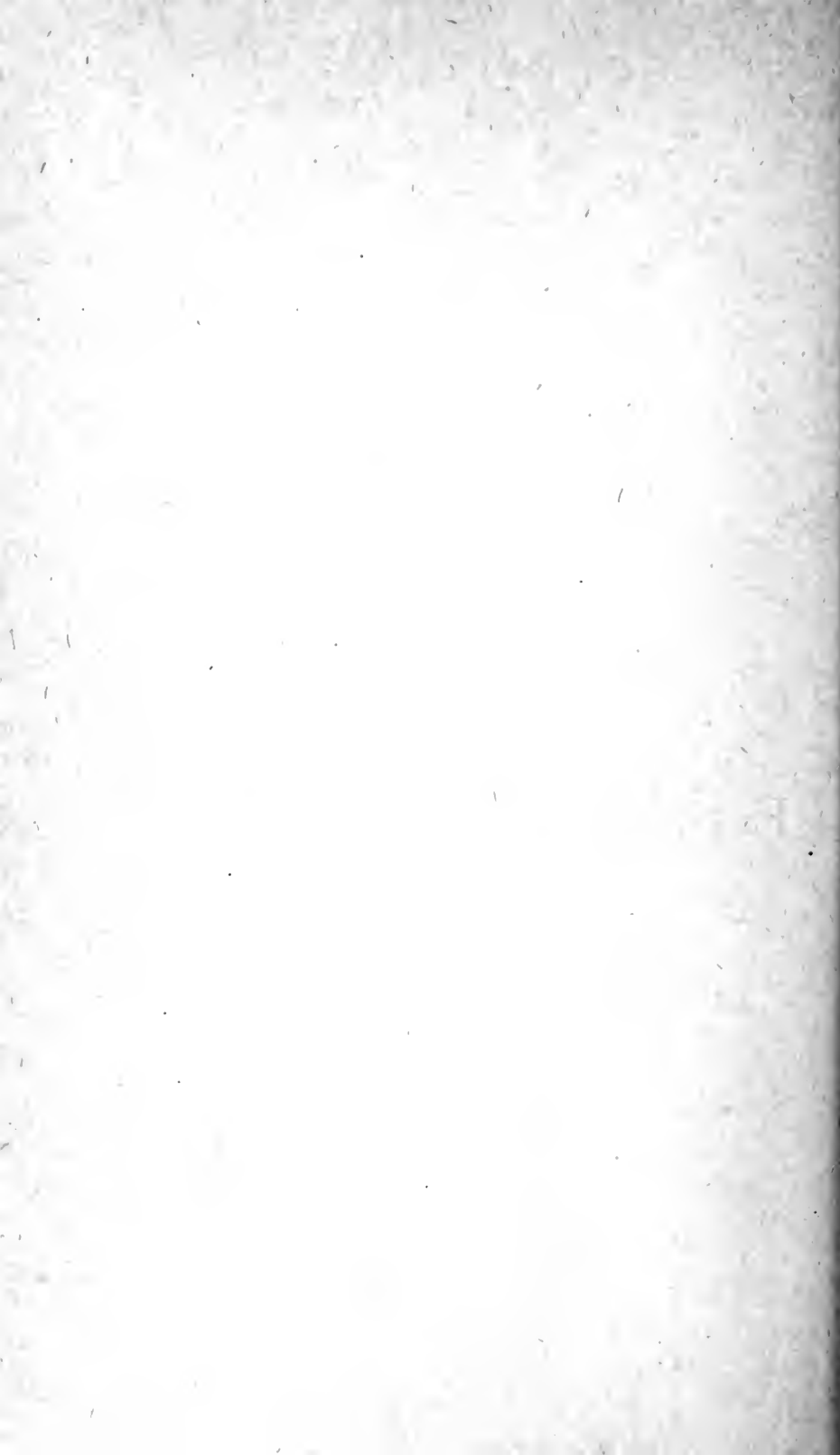
The copy book is used mainly for the form; do much practice work on paper.



COURSES OF STUDY

FOR THE

Evening Elementary Schools



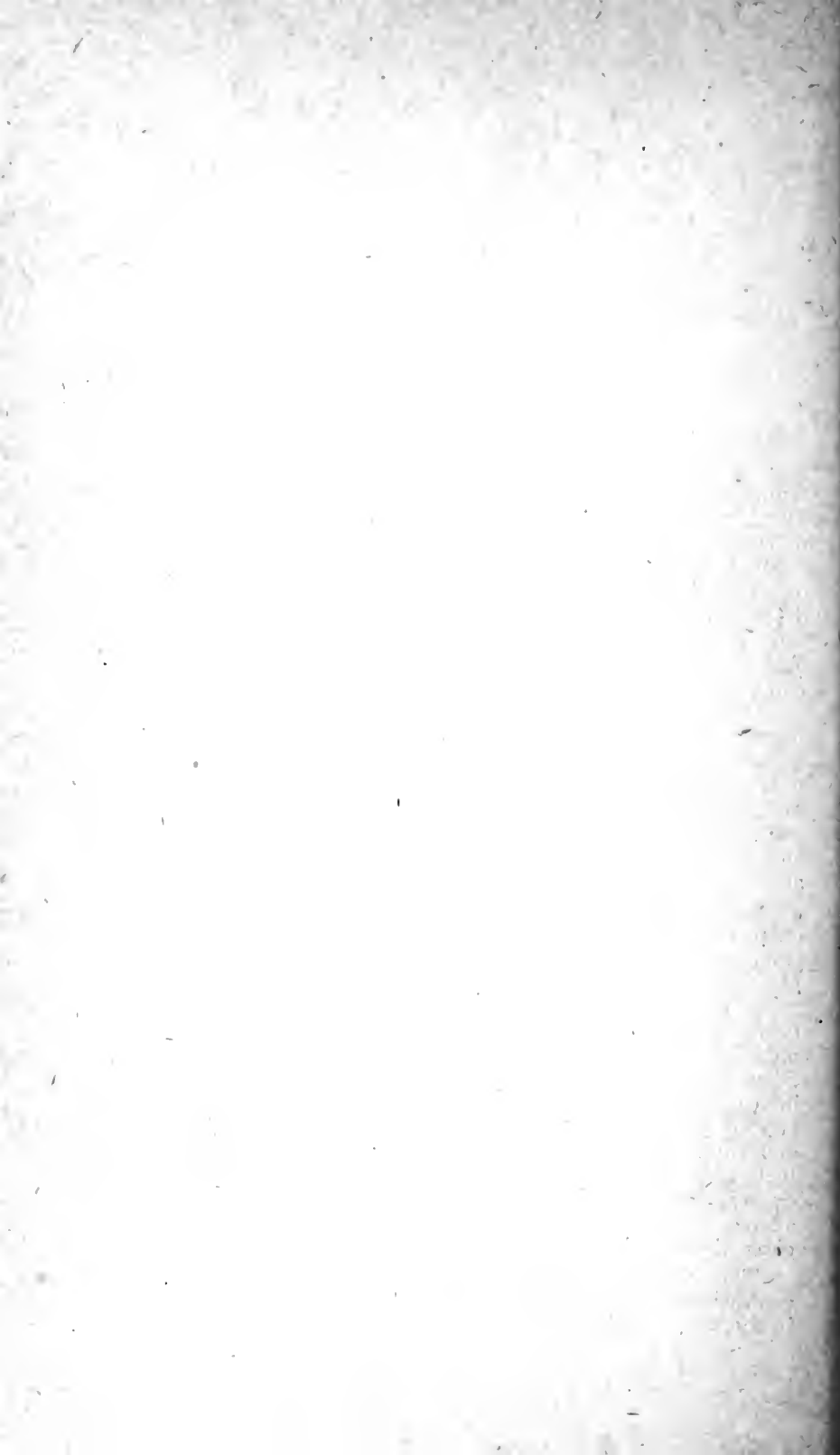
PREFACE.

The graded classes of the Evening Schools cover six years, arranged like those of the day schools—two grades in a year. They are numbered from A4 to B9 inclusive. As no pupils under fourteen years of age are permitted by the charter to attend evening school, it is presumed that applicants for admission to the evening courses will have had at least third grade work in the day schools. Children fourteen years of age who have not completed the third grade need special attention, and will be placed in ungraded classes, under expert teachers, until fitted to enter one of the regular grades.

Each evening is divided into three periods, making fifteen for the week. Of these five are devoted to Arithmetic (including Bookkeeping), five to English (including Composition, Grammar, Literature, Reading, and Spelling), and Penmanship, three to History, and two to Geography. In accordance with Section 1365 of the State law, informal talks on nature-study, physiology and hygiene, and humane education will be given by the teacher, at least once a month.

In addition to the regular graded classes, covering a course of six years and leading to the High Schools, there are Special Courses, arranged primarily for adults, in which students who possess sufficient scholarship to profitably undertake the work may devote their entire evenings to a single subject. Special Courses will be offered in each of the following subjects: Arithmetic, Bookkeeping, Stenography and Typewriting, and Civil Service preparation. As the demand for such Special Courses increases there will be additional provision for adults desiring to take up particular subjects. Graduates of the Grammar schools, and students 18 years of age or over who satisfy principals of their fitness to do the work will be admitted to these special classes. The Special Courses are very flexible and will be adapted to the needs of the students who may be enrolled at any given time.

The Foreign Classes for foreigners who desire to become proficient in the use of the English language will be continued as in the past.



ARITHMETIC.

A FOURTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in READING AND WRITING OF NUMBERS and in column ADDITION, SUBTRACTION and MULTIPLICATION.

DIVISION.—Review carefully long division by one number as long division by two numbers is to be nothing more nor less than an outgrowth of the division work of the previous grade.

Teach long division by two figures, using through the entire grade such divisors as 91, 83, 72, etc., where the second figure is much smaller than the first.

Present long division in the following steps:

- (1) (a) *Object*—To teach use of trial divisor.
(b) *Material*—Use dividend that will give one figure in quotient and make first trial divisor the final

$$\begin{array}{r} 91 \overline{) 834} \\ 819 \\ \hline 15 \end{array}$$

quotient, as in:

- (c) *Process*—"How many 9's in 83?"
"9 9's in 83."

Multiply 91 by 9.

Subtract.

Put remainder in answer.

Give much drill on this step so that the work becomes mechanical.

(2) (a) *Object*—To teach method of testing.

(b) *Material*—Use dividend that will give one figure in quotient, but where first trial divisor is not the final quotient (where the final trial divisor is one less than the first

$$\begin{array}{r}
 88\frac{3}{93} \\
 \text{trial divisor}), \text{ as in: } 93 \overline{)827} \\
 \underline{744} \\
 83
 \end{array}$$

(c) *Process*—"How many 9's in 81?"
 "9 9's in 81. Next number—17."
 "9 3's are 27. 27 is larger than 17, therefore the trial divisor is 8" (one less than 9).
 Multiply 93 by 8.
 Subtract.
 Put remainder in answer.

Give much drill on this step so that the work becomes mechanical.

(3) Extend the dividend so as to get two figures in the quotient. Later three figures in the quotient.

Give much drill to make the work thoroughly mechanical.

FRACTIONS.—READING AND WRITING OF FRACTIONS.—The child can read, write and change fractions with one figure in the denominator. Extend the work to denominators of two figures as far as 81, using only the numbers learned as products in the multiplication combinations. Make certain that the child can perform with certainty the following changes:

(a) From mixed number (or whole number) to improper fraction.

(b) From improper fraction to mixed number (or whole number).

ADDITION OF FRACTIONS.—Present addition of fractions covering common denominators involving two figures, not higher than 81.

First, cover the difficulties with common denominators of one figure, illustrating the truth of the processes objectively, as follows:

(1) With the same denominators:

(a)	(b)	(c)	(d)
$\frac{1}{4}$	$1\frac{1}{4}$	$\frac{2}{3}$	$1\frac{2}{3}$
$\frac{2}{4}$	$3\frac{3}{4}$	$\frac{2}{3}$	$3\frac{2}{3}$
<hr/>	<hr/>	<hr/>	<hr/>
$\frac{3}{4}$	$4\frac{3}{4}$	$\frac{4}{3}$	$4\frac{4}{3}$
		$1\frac{1}{3}$	$1\frac{1}{3}$
			<hr/>
			$5\frac{1}{3}$

(2) With different denominators, one being a common denominator:

(a)	(b)	(c)	(d)
$\frac{1}{2}$	$\frac{2}{4}$		
$\frac{1}{4}$			
<hr/>			
$\frac{3}{4}$			

(Carry through steps b, c and d)

(3) With different denominators, none being a common denominator:

(a)	(b)	(c)	(d)
$\frac{1}{2}$	$\frac{3}{6}$		
$\frac{1}{3}$	$\frac{2}{6}$		
<hr/>			
$\frac{5}{6}$			

(Carry through steps b, c and d.)

Later, cover the same difficulties with common denominators that fall within the multiplication combinations learned.

After the addition of two fractions (or mixed numbers) is well mastered, give three or four to show that the same principle applies, but keep the examples simple.

Drill on reduction to lowest terms whenever the opportunity occurs.

MEASURE.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Length—12 inches=1 foot.

3 feet=1 yard.

$16\frac{1}{2}$ feet or $5\frac{1}{2}$ yards=1 rod.

Cubic—1728 cu. in.=1 cu. ft.

27 cu. ft.=1 cu. yd.

Review measures of area (sq. in., sq. ft., sq. yd.), weight (ounces, pounds, tons), liquids (pts., qts., gals.), time and value.

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction. Use one step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are not too difficult for the children. Thus: "How many months in 23 years?" "How many years in 36 months?"

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

All problems are to be presented to the child orally, though he may perform necessary operations on blackboard or paper.

Review problems involving one-step reasoning, as they form the basis for solving problems with two-step reasoning which are presented for the first time in this grade. Present two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple, one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

B FOURTH GRADE.**FORMAL WORK.**

WHOLE NUMBERS.—Give regular and frequent reviews in **READING AND WRITING OF NUMBERS** and in column **ADDITION, SUBTRACTION** and **MULTIPLICATION**.

DIVISION.—Review long division by two numbers with easy divisors, such as 91, 82, etc. Gradually give more difficult divisors, such as 27, 38, 49, etc. The teacher may show the children on the blackboard how to perform long division with such divisors by "testing," which is a slow method, then presenting the method of having the children call such divisors as 27, 28, 29, "thirty," for purposes of getting the partial quotient. Extend the divisor to three or four places in a few lessons just to show that the principles of long division already mastered apply.

At the beginning of this term teach short division as a short way of doing division by one figure, as in

$$\begin{array}{r} 9535\frac{5}{8} \\ \hline 8 \overline{) 76285} \end{array}$$

FRACTIONS.—Review **READING AND WRITING OF FRACTIONS** with changes from mixed number to improper fraction, and vice versa. Review **ADDITION OF FRACTIONS** and mixed numbers where the denominator is not above 81.

SUBTRACTION OF FRACTIONS.—Present subtraction of fractions covering common denominators involving two figures, not higher than 81.

First, cover the difficulties with common denominators of one figure, illustrating the truth of the processes objectively, as follows:

(1) With the same denominators:

(a)	(b)	(c)
$\frac{4}{5}$	$6\frac{4}{5}$	$5\frac{7}{5}$
$\frac{2}{5}$	$3\frac{2}{5}$	$6\frac{3}{5}$
<hr/>	<hr/>	<hr/>
$\frac{2}{5}$	$3\frac{2}{5}$	$2\frac{3}{5}$

(2) With different denominators, one being a common denominator :

(a)	(b)	(c)
$\begin{array}{r} \frac{3}{4} \\ \frac{1}{2} \\ \hline \frac{1}{4} \end{array}$	$\frac{2}{4}$	(Carry through steps b and c.)

(3) With different denominators, none being a common denominator :

(a)	(b)	(c)
$\begin{array}{r} \frac{3}{3} \\ \frac{1}{2} \\ \hline \frac{1}{6} \end{array}$	$\frac{4}{6} \quad \frac{3}{6}$	(Carry through steps b and c.)

Later, cover the same difficulties with common denominators that fall within the multiplication combinations learned.

Drill on reduction to lowest terms whenever the opportunity occurs.

DECIMALS.—READING AND WRITING OF DECIMALS.—Teach reading and writing of decimals through three places.

Show that decimals are only a form of common fractions by objective work, or derive the relationship from U. S. money. The child already knows a "quarter" is \$.25, a "half" \$.50, etc.

With very simple numbers show how to make the following changes:

- (1) Change a decimal to a fraction.
- (2) Change a fraction to a decimal.

MEASURES.—Add to the measures already learned the following:

Length—5280 feet=320 rods=1 mile.

Square—30 $\frac{1}{4}$ sq. yards=1 square rod.

160 square rods=1 acre.

640 acres=1 square mile.

Cubic—1728 cubic inches=1 cubic foot.

27 cubic feet=1 cubic yard.

128 cubic feet=1 cord.

Review measures of liquid (pt., qt., gal.), weight (oz., lb., ton), U. S. money and time, and also previously learned parts of linear (in., ft., yd.), and square measure (sq. in., sq. ft., sq. yd.).

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible use the measures as concrete material for the application of formal addition and subtraction. Use one-step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are not too difficult for the children. Thus, "How many months in 23 years?" "How many years in 36 months?"

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

All problems are to be presented to the child orally, though he may perform necessary operations on blackboard or paper.

Review problems involving one-step reasoning, as they form the basis for solving problems with two-step reasoning which constitute the special work of this year. Give two-step reasoning problems, such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems, such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation always have the children, after hearing the problems, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

A FIFTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in reading and writing of numbers, in column addition, subtraction and multiplication, and in long and short division.

FRACTIONS.—Review READING AND WRITING OF FRACTIONS with changes from decimal to fraction, and vice versa.

ADDITION AND SUBTRACTION OF FRACTIONS.—Review addition and subtraction of fractions with common denominators of two figures, up to 81.

Add and subtract fractions involving common denominators larger than 81. Proceed by the following steps:

(1) (a) Object—To find common denominator for several fractions.

(b) Material—Fractions, with denominators of two figures, not above 81 $\frac{5}{12}$, $\frac{7}{18}$.

(c) Process—

3	12	18	
	4	6	
	2	3	

or

6	12	18
	2	3

Common denominator is the product of

$3 \times 2 \times 2 \times 3$ (or $6 \times 2 \times 3$) or 36.

(2) Proceed to change fractions from one denominator to common denominator as with simpler figures, and add or subtract as before.

Merely give enough work in finding common denominator to fix the method. Give no more work with common denominators above 81 than is necessary to apply the factoring process.

MULTIPLICATION OF FRACTIONS.—Present multiplication of fractions by the method of "cancellation," thus: $\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$. Drill specially on cancellation. All answers should be in simplest terms. At first use only fractions with denominators of a single figure, using objective work to show correspondence of the process to reality. Give no other explanation. Drill the children until they are able to multiply the following with habitual and mechanical ease:

- (1) (a) Fraction by integer.
- (b) Integer by fraction.
- (c) Fraction by fraction.

DECIMALS.—Review READING AND WRITING OF DECIMALS, with changes from decimal to fraction, and vice versa.

ADDITION AND SUBTRACTION OF DECIMALS.—Teach addition and subtraction of decimals of three places in this grade. Give a preliminary drill in arrangement of decimals according to the decimal point. When the children can arrange the numbers, teach bringing down the decimal point. Then add or subtract as with whole numbers, thus:

(a) 81.05 9.156 70.84 <hr style="width: 100px; margin-left: 0;"/> 161.046	(b) 974.02 6.045 <hr style="width: 100px; margin-left: 0;"/> 967.975
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Later, extend the decimal places in a few exercises to show that the same principle applies.

DENOMINATE NUMBERS.—Review the measures of length (in., ft., yd., rd., mi.), area (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi.), volume (cu. in., cu. ft., cu. yd., cord), liquid (pt., qt., gal.), weight (oz., lb., ton), time and United States money.

Use measures in connection with real situations in order that children may know for what kind of things the measures are used in actual life.

Use two-step reduction, up and down, showing that two-step reduction is nothing but one-step reduction repeated. Do not continue the work after the principle is mastered.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Hitherto, all problems have been presented to the child orally. With this grade they may be presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child, so as not to confuse and puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show

that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures necessitating written work may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

B FIFTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in reading and writing of numbers, in column addition, subtraction and multiplication, and in long and short division.

FRACTIONS.—Review READING AND WRITING OF FRACTIONS, ADDITION, SUBTRACTION AND MULTIPLICATION OF FRACTIONS.

MULTIPLICATION OF FRACTIONS.—Continue drill of previous grade, until the children are able to multiply the following with habitual and mechanical ease:

- (2) (a) Mixed number by integer.
- (b) Integer by mixed number.
- (c) Mixed number by mixed number.

Later, use fractions with denominators of two figures up to 81. When the preceding work has been thoroughly mastered, a few exercises with larger denominators might be given, merely to show the children that the same method of operation applies.

DECIMALS.—Review READING AND WRITING OF DECIMALS, with changes from decimal to fraction and vice versa. Also review ADDITION AND SUBTRACTION OF DECIMALS.

MULTIPLICATION OF DECIMALS.—Teach multiplication of decimals (of three places) in this grade. First, multiply as though both multiplier and multiplicand were whole numbers. Then

count up the total number of figures in decimal places in both multiplier and multiplicand. Finally, point off, from the right, the same number of figures in the product and place the decimal point. Thus:

$$\begin{array}{r}
 42.56 \\
 7.5 \\
 \hline
 21280 \\
 29792 \\
 \hline
 319.200
 \end{array}$$

Teach the process of "pointing off" as a purely mechanical one. Do not teach by memorizing a rule, but by having the child do it repeatedly. Give much drill.

DENOMINATE NUMBERS.—Review the measures of length (in., ft., yd., rd., mi.), area (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi.), volume (cu. in., cu. ft., cu. yd., cord), liquid (pt., qt., gal.), weight (oz., lb., ton), time and United States money.

Use measures in connection with real situations in order that children may know for what kind of things the measures are used in actual life.

Use two-step reduction, up and down, showing that two-step reduction is nothing but one-step reduction repeated. Do not continue the work after the principle is mastered.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Drill the child on problems presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child, so as not to confuse or puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

A SIXTH GRADE.

REVIEW OF FORMAL WORK.—There should be frequent and regular drill on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

DIVISION OF FRACTIONS.—Present division of fractions by the method of "inversion and cancellation," thus:

$$\frac{3}{4} \div \frac{1}{8} = ? \quad \frac{3}{4} \times \frac{8}{1} = 6$$

Drill specially on inversion. All answers should be in simplest terms. At first use only fractions with denominators of a single figure, using objective work to show correspondence of the process with reality. Give no other explanation. Drill the children until they are able to divide the following with habitual and mechanical ease:

- (1) (a) Fraction by integer.
- (b) Integer by fraction.
- (c) Fraction by fraction.

DECIMALS.—REVIEW READING AND WRITING OF DECIMALS, ADDITION, SUBTRACTION AND MULTIPLICATION OF DECIMALS.

DIVISION OF DECIMALS.—Teach division of decimals (of three places) in this grade. First, give a preliminary drill in placing the decimal point in the quotient space. Thus:

$$8.3 \overline{) 9175.64} \quad \text{or} \quad 8.3 \overline{) 750.}$$

STEPS:

(2) Count the same number of places to the right of the decimal point in the dividend, and place a decimal point in the corresponding place in the quotient space.

(3) Divide as for whole numbers.

Teach this process of "pointing off" as a purely mechanical one. Do not teach by memorizing a rule, but by having the child do it repeatedly. Give much drill.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Hitherto, all problems have been presented to the child orally. With this grade they may be presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child, so as not to confuse or puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

B SIXTH GRADE.**REVIEW OF FORMAL WORK.**

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

DIVISION OF FRACTIONS. Continue drill until children are able to divide the following with habitual and mechanical ease:

- (2) (a) Mixed number by integer.
- (b) Integer by mixed number.
- (c) Mixed number by mixed number.

Later, use fractions with denominators of two figures, up to 81. When the preceding work has been mastered, a few exercises with larger denominators might be given merely to show the children that the same method of operation applies.

PERCENTAGE.—The arithmetic work of the sixth year is given over to the treatment of percentage. In this grade the emphasis is on formal work in percentage, though the principles of percentage should receive constant application at every point. Special drill should be given on the following formal processes:

- (1) To find any per cent of a number.
- (2) To find what per cent one number is of another.
- (3) To find a number when a certain per cent of it is given.

Present percentage in its relation to decimals and common fractions, showing how to change from one to the other readily. The percentage equivalents of the most common fractions should be learned and used as the basis of much "mental" work. (*State Arith.*, p. 216.)

Apply percentage to simple, real situations, that the child is likely to need to understand in terms of per cent. Use simple interest, in years and half-years only, as one easy application.

Use *Grammar School Arithmetic* (Cal. State Series), as a text, selecting necessary material from pp. 216-228. Teachers may use Smith's *Grammar School Arithmetic* as a desk book from which to gather further material. (See pp. 181-184.)

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

A SEVENTH GRADE.**REVIEW OF FORMAL WORK.**

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

BUSINESS APPLICATIONS.

BUSINESS LIFE.—Discuss the topic of "Going into Business." (See *Smith*, pp. 306, 307), showing that every person, whether he conducts a business, works on a wage, or draws an income, needs to be "businesslike." Discuss the following sub-topics: Simple Accounts (*Smith*, p. 338), Bank Accounts, Savings Banks, Banks of Deposit (*Smith*, pp. 326-329). Show how to make out the following business forms: Simple Accounts, Deposit Slip, Check (*Smith*, pp. 328, 329, 204), Receipted Bill and Receipt (*Smith*, pp. 125, 136, 205).

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

B SEVENTH GRADE.**REVIEW OF FORMAL WORK.**

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

PERCENTAGE.—Review formal percentage, particularly the following processes:

- (1) To find any per cent of a number.

- (2) To find what per cent one number is of another.
- (3) To find a number when a certain per cent of it is given.
- (4) To change any per cent to decimal and common fractions, or the reverse.

BUSINESS APPLICATIONS.

As the work of the previous grade emphasized the formal work of percentage, the work of this grade emphasizes its application to business life. The special topic for this grade is "The Buying and Selling of Goods," and covers the sub-topics: "*Merchandising*," "*Commission*" and "*Trade Discount*." The teacher should discuss the nature and function of these various business relations before giving the technical and mathematical methods of computation used in the same. This information is just as valuable as the mere arithmetic and serves to make the latter seem more real and useful to the child.

MERCHANDISE.—Teach profit and loss in buying and selling of goods. Give simple problems that business men must solve every day. Avoid complicated problems with three and four steps in reasoning. Use *Grammar School Arithmetic* (State Series) as a text, selecting necessary material from pp. 228-230. Teacher may find additional material in Smith's *Grammar School Arithmetic*, pp. 194-197, which may be used as a desk book.

COMMISSION.—Teach the method of computing commissions for buying and selling goods. Stick to actual commission problems, avoiding complicated problems that are puzzling and unreal. Avoid problems, part of the data of which is in previous examples. Use *State Arithmetic*, selecting necessary material from pp. 230-233. Additional material may be found in *Smith's Arithmetic*, pp. 199-201.

TRADE DISCOUNT.—Teach the process of computing trade discount. At first, avoid all examples mixing discount with profit and loss, etc. Two-step reasoning should be the limit in any problem, unless the principles involved are exceedingly simple. Use *State Arithmetic*, selecting necessary material from pp. 233-236. Additional material may be found in *Smith's Arithmetic*, 335-337. Have the children write orders and bills as suggested in *Smith*, p. 337.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

A EIGHTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills in the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

BUSINESS APPLICATIONS.

In this grade the study of arithmetic as applied to business is continued. The special topic for this grade is "*The Borrowing and Loaning of Money*," and covers the special topic of "*Interest*," with some incidental treatment of "*Promissory Notes*," "*Partial Payments*" and "*Compound Interest*." Our whole system of loaning and borrowing money, with the function of banks, should be explained to the class before computing interest or writing notes.

INTEREST.—Simple interest for years and half years has been taken up as an application of percentage in the A Sixth Grade. In this grade study interest for years, months and days calculated

by the 6 per cent method. Omit other methods. Use *Grammar School Arithmetic* (California State Series) as a text, selecting necessary material from pp. 236-243. Further material may be found in Smith's *Grammar School Arithmetic*, pp. 299-305, which may be used as a teacher's desk book.

Have the class write promissory notes, explaining their use and meaning. (See *State Arithmetic*, pp. 244, 245.) Treat partial payments and compound interest briefly, merely showing that they are both applications of simple interest, one being a decrease of the principal and the other an increase. Tell where and how they are used. No long and involved problems.

Omit Bank Discount.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

B EIGHTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

BUSINESS APPLICATIONS.

The study of arithmetic as applied to business is continued in this grade. The special topic for the term is "*The Protecting of Our Business Interests*," and includes the sub-topics of "*Insurance*" and "*Taxes*." Before treating the processes the class should discuss the institutions of Insurance and Taxation. The first is our way of paying a company for protection against accident, fire, water, etc. The second is our way of paying the government for protecting us against disorder, violence and lawlessness.

INSURANCE.—Discuss both Property and Personal Insurance, but teach the class to work examples only in Property (or Fire) Insurance, omitting all examples in Personal (or Life) Insurance. Use *Grammar School Arithmetic* (California State Series) as a text, selecting necessary material from pp. 254, 255. Further material may be found in Smith's *Grammar School Arithmetic* pp. 359, 360, which may be used as a teacher's desk book.

TAXES.—Discuss the various forms of taxation. Compute only Property Tax. Omit all examples in indirect taxation, such as Duties and Customs, Internal Revenue, etc. Select necessary material from *State Arithmetic*, pp. 259-261. For additional material, see *Smith's Arithmetic*, pp. 357, 358.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

A NINTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

Give short reviews in the formal methods of applying percentage as used in Merchandising, Commission, Trade Discount and Interest. Select necessary material from the text, *Grammar School Arithmetic* (California State Series) and Smith's *Grammar School Arithmetic*, which may be used as a teacher's desk book. Page references are as follows: Merchandising (*State*, 228-230) (*Smith*, 194-197); Commission (*State*, 230-233) (*Smith*, 199-201); Trade Discount (*State*, 233-236) (*Smith*, 335-337); Interest (*State*, 236-243) (*Smith*, 299-305).

BUSINESS APPLICATIONS.

In this grade the study of arithmetic as applied to business is continued. The special topic for this grade is "*Business Co-operation*," which includes the sub-topics of "*Partnership*" and "*Corporations*." Discuss the place of each in our business life. Have the children work out simple partnership examples as an application of ratio and proportion. Omit all computations relating to Corporations, such as stocks and Bonds.

For problems in partnership select necessary material from *State Arithmetic*, "Proportional Parts," pp. 348-351. Further material may be found in *Smith*, pp. 339, 340. Select no problems where more than one simple proportion is involved.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

A NINTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

Review the commonly used measures, such as linear (in., ft., yd., rd., mi.); square (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi., township), and cubic measure (cu. in., cu. ft., cu. yd.), and

measures of weight (oz., lb., ton), liquid (pt., qt., gal.), time and U. S. money.

Give short reviews in the formal methods of computing Property (or Fire) Insurance, Property Taxes (State and Local) and Partnership. Select necessary material from the text, *Grammar School Arithmetic* (California State Series) and Smith's *Grammar School Arithmetic*, which may be used as a teacher's desk book. Page references are as follows: Insurance (*State*, 254, 255) (*Smith*, 359, 360); Taxes (*State*, 259-261) (*Smith*, 357, 358); Partnership (*State*, 348-351) (*Smith*, 339, 340).

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

INTRODUCTION TO LANGUAGE AND COMPOSITION.

One aim of education is correct thinking. Composition is training the child to *think* and to express his thoughts in good English. As reading should be from the first a thought-getting process, so composition should be always a thought-expressing process. Even the formal drill for *fixing* certain forms in language should have a thought content. The teacher, therefore, must stimulate or awaken thought in the child before asking for its expression. The expression of the thought leads to greater clearness, so reforming and recasting the sentence, paragraph or composition gives better language and clearer thought. Correction is, therefore, an essential part of composition. It must, however, be only such as will help the child to better self-expression. Suit the corrections to the age and development of the child.

Essential to composition are meanings of words, sentence structures, thought, and motive or incentives for expression. The child learns oral language largely from what he hears; therefore must the teacher be a model of correct speaking. Written language is to a great extent an imitation of what the child reads. Thus is every reading lesson a teaching of composition. To be effective the child must be made observant of the meaning of words in their context, of the construction of sentences. The child must observe the unity of a good sentence, then the unity of a good paragraph, and later the unity of a good selection. As he thus thinks in its completeness the thought of another, he acquires completeness in his own thought. What he learns, in his reading lesson, of sentence and paragraph structure he applies in his study of history and geography, and what he learns from these subjects reacts upon his own thought and expression. Since we think in language as it sounds to us, good oral reading is of utmost importance; and, since we think in sound, reading composition aloud is the best method for its correction. Avoid all reading matter which contains bad grammar, such as dialect. Drill in correct forms till they *sound* correct to the child; then, as he reads his composition aloud, his ear will detect errors which would escape memorized rules of technical grammar.

The child acquires thought from all the subjects which he

studies in school; therefore must all subjects be drawn upon for composition material. Even in arithmetic, instead of always giving the children examples from a book, they should often be required to make up and word well their own examples. Before writing, the child should think his subject through and through, stimulated by questions from the teacher or by class discussion. He should then arrange his thoughts, following unconsciously the models that have been put before him in literature, geography and history. Do not check freedom and originality of thought by over-criticism, but, on the other hand, do not allow the writing to become crude by haste or indifference. Mere volubility from tongue or pen is not in itself a virtue. Both thinking and expression need guidance.

Motive for expression is of utmost importance. Per cent, grading, promotion, scolding and adverse criticism never lead to best effort. With most children, particularly the younger ones, the teacher's approval is a great incentive. Heartly appreciation of the good leads to the better. An appreciative audience is, perhaps, the greatest stimulus to a speaker or writer. The child may not have an audience for everything he writes, but if the teacher and class are occasionally his listeners, then other written exercises take on new interest as preparation for such audience. If the effort is an honest one, something may always be found to commend, and correction must be helpful to the child in better thought and expression.

ORAL COMPOSITION.

In the lower grades the composition should be largely oral, the written work increasing as a child advances from grade to grade. In the upper grades oral composition in large part takes the form of recitation. Correction in language should be made by quietly suggesting the right form and not by stopping the child's thought for a lecture on technical grammar. With a nervous or timid child the correction is best made at the close of his recitation. Occasionally exercises may be given for the express purpose of oral composition, subjects being assigned to look up and present to the class in talks. The subjects should always be such as will interest the listeners; thus the speaker has an attentive audience. Debates may give practice in speaking.

Children must be taught the use of authorities and reference books, preparation and arrangement of material, discrimination

between argument and mere assertion, the difference between clear, forceful language and mere bombast. Debate unguided often controverts its own purpose.

SUBJECTS FOR COMPOSITION.

Pictures are good subjects for composition, especially for young children. Teachers must be skillful in leading children to a correct reading of a picture. We all read print; comparatively few read pictures. The exercise may be merely to describe what is seen in the picture or to make a story suggested by the picture. When children are slow to begin the work the teacher should be ready to suggest several lines of treatment, then ask each child to invent his own. A general class lesson may be given from a picture large enough to be seen by all. Small pictures pasted on cards are distributed to the class and each child holds up his picture as he reads or tells the story.

A story is read or told to the children. They reproduce the story as told; tell it with some modifications of incidents, or make a similar story of their own. Mere paraphrasing is not a good exercise in composition.

Nature study from plants, animals, outdoor geography, school gardening, experiments and observations and visits to commercial and manufacturing establishments will give most interesting thought for expression. Observation here forms a basis for both writing and drawing.

Geography is full of good composition subjects. These should generally take the form of letters from points of travel. The mere skeleton of facts given in the text book should be filled out from supplemental and parallel reading. The teacher should be always ready to suggest incidents that will give spice to such letters. Good letters of travel should be read to the class.

Reading and literature offer many good subjects. These are particularly useful for oral expression as a means for testing the power of silent reading. Attention must be constantly called to choice of words, structure of sentence and paragraph, paragraph topics and relation of paragraph topics to each other. Abstracting a prose selection tests the child's grasp of the thought. Character sketches, expanded descriptions or stories following the author as a model, all give power of thought and language. Current topics offer much of interest. A committee for each day or week may be appointed to inform the class of important events. Their reports may be oral or written on the blackboard. Or a current topic paper may be prepared, editors being appointed for each week. This subject requires skillful handling. The teacher

should possess an elementary knowledge of political economy and international law. Current history needs *interpreting* to be of any value to the children. Such work is recommended for the grammar grades.

The forms of business and social correspondence should receive much attention in the proper grades. These are the two forms of written composition which will be most used in after life. The work of the Evening School is to produce not men of letters but business men. Much practice in writing applications, writing notices, answering advertisements and wording telegrams.

Much composition should be based on business forms and reading in history and geography. Half of the class may write at the board while the others write on paper.

Not everything the child writes need be corrected by the teacher. Encourage the children to find and correct their own errors before submitting to the teacher or to another pupil for criticism. Oral correction is most effective. Point out a few typical errors in several compositions; then have children look for similar ones in their own or their neighbor's work. Do not fail to commend excellence.

The following steps should be kept in mind as the aim of all good composition training:

- 1—Full reading, thought and collection of material.
- 2—Selection and arrangement before writing (outlining).
- 3—Free and spontaneous writing.
- 4—Careful criticism and revision.

Most teachers aim at the third step, omitting the preparation. Many omit the fourth step, thus failing to make the pupil a self-critic. Some try to make the third and fourth step simultaneous, thus making the child self-conscious and the style stilted. The four steps are all necessary for the best originality.

Constant attention should be called to the qualities of good writing in history and literature. As the child learns to analyze the author's thought and perceive its arrangement, he masters the art of study, and this reacts upon his own power of thought and expression. Thus are all the Language Arts correlated.

LANGUAGE AND COMPOSITION.

FOURTH YEAR.

Continue oral composition. Develop or stimulate thought on a subject, then write several sentences. Gradually lead children to rearrange sentences to make good paragraph. Call attention to structure of paragraph in reading, central thought, subordinate thoughts arranged about it. During second term write two or three paragraphs. Call attention in the reading to constructions and arrangements of sentences to make them fit together in the paragraph. Make the ear the test of good composition. If the ear is incorrect, educate it by oral drill and reading of correct form. Mere rules are useless if the expression does not *sound* right to the child.

A FOURTH GRADE.

Lessons in Language, State Series, in the hands of the teacher. Base the formal work on lessons 1 to 14. Use *Foundation Lessons in English*, Book I, to page 35, for suggestions. See Fourth Year.

B FOURTH GRADE.

Language Lessons in the hands of the children. Base formal work on lessons 15 to 32. Use *Foundation Lessons in English*, Book I, to page 60, for suggestions in composition. See Fourth Year.

FIFTH YEAR.

Give special attention to paragraph writing from topic sentences, pictures, stories, etc., to outlining of paragraph topics, from reading or oral composition and to "composite composition": (1) Teacher and class talk over subject (oral composition); (2) select paragraph topics from previous discussion; (3) average topics for a letter; (4) children suggest sentences

on first topics, teacher writes in corrected form on blackboard; (5) children read paragraph aloud to test correctness, smoothness, arrangement of sentences; (6) rewrite paragraph as corrected; (7) children copy corrected paragraph; (8) treat other paragraphs in similar manner. Lead children to more and more independent work in writing of paragraphs and outlining.

A FIFTH GRADE.

Lessons in Language, State Series, lessons 33 to 50. Much material must be taken outside of text book. For suggestions in composition see *Foundation Lessons in English*, Book I, page 60 to 92. See Fifth Year.

B FIFTH GRADE.

Lessons in Language, State Series, lessons from 51 to 67. These lessons are but a small part of the term's work. Much outside material must be used. Train children to observe meaning of words, sentence and paragraph structure in their reading lessons. For suggestions in composition see *Foundation Lessons in English*, Book I, pages 93 to 120. See Fifth Year.

SIXTH YEAR.

Continue work of composite composition. (See Fifth Year.) Let children write one or more paragraphs of each composition independent of teacher, then read for criticism. Put emphasis on the good things. Gradually increase the number of paragraphs written independently. More and more independent outlining.

Composite composition should be but part of the work. Children should do much writing. Give special attention to letter writing, to answering advertisements and to letters of application for work. Give special attention to use of comma, period, question mark, capitals and paragraph.

A SIXTH GRADE.

Lessons in Language, State Series, lessons from 68 to 87, may be made the basis of part of the work. Suggestions for composition may be found on pages 82 to 89. Some composition should

be done from reading in History and Geography. For suggestions in compositions consult *Foundation Lessons in English*, Book I, pages 120 to 154. Teachers may give the simple lessons in grammar contained in this book, teaching it orally.

B SIXTH GRADE.

Lessons in Language, State Series, lessons 88 to 102, will be basis of formal work. Suggestions for composition may be found on pages 89 to 94, but the same material need not be used. Much additional work must be taken. Continue work in business letters and have a number of letters to parents or friends written from points of travel in the Geography. For suggestions in composition see *Foundation Lessons in English*, Book I, pages 154 to 197. The simple grammar in these lessons may be taught orally, but should not occupy much time.

SEVENTH, EIGHTH AND NINTH GRADES.

The Seventh, Eighth and Ninth Grades will take their composition subjects from business relations, history, geography, and the reading connected with these subjects. The form will be largely that of the business or social letter. In addition to this attention is to be given to paragraph writing and to outlining. The work suggested for Fifth and Sixth Grades may be used profitably for any children who have not had sufficient drill of this character. It is doubtful if any of our classes have had enough of this drill.

The oral correction of composition in class has been found very helpful, as each pupil gets the benefit of the corrections and the teacher is saved much laborious work. The teacher, however, must look over some composition for the sake of spelling, capitals, grammar, penmanship and correct form. Before a set of compositions is corrected by the teacher there should be oral correction in the class pointing out in several papers characteristic mistakes. Composition should then be rewritten by pupils and put in the composition book, using left page only. The teacher then looks over composition, indicating by marginal signs the sentences in which mistakes occur, thus: S for spelling, C for capitals, G for grammar, P for punctuation, — for paragraph, W for choice of words, etc. Pupil then rewrites on right hand page, correcting mistakes. As a premium on careful work, a cross at the top of left hand page indicates that only sentences in

which mistakes occur need be copied on right hand page. Appeal to pupil's pride to keep the right hand pages as nearly blank as possible. Have them note improvements in their own work.

There should be frequent exercises in paragraph writing on current topics. If these are written on the blackboard, the entire class will get the benefit of the correction. *Foundation Lessons in English*, Book II, will afford the teacher very helpful suggestions in both composition and grammar. The pupils need not purchase the book, but the teacher may use it for reference.

A Seventh. *Foundation Lessons*, Book II, to page 36.

B Seventh. " " " Pages 36 to 71.

A Eighth. " " " Pages 71 to 99.

B Eighth. " " " Pages 99 to 120.

A Ninth. " " " Pages 120 to 147.

B Ninth. " " " Pages 147 to 195.

The B Ninth Grade should give much attention to phrase and clause analysis and to the larger thought relations of the sentence. So called parsing is of little use, but thought analysis is of great importance.

GRAMMAR.

Grammar treats of the thought relations of the sentence. Teach these relations, not technical terms only.

Do not teach the book merely, but use it as an aid in teaching the subject. The book does not grade difficulties. This must be done by selecting easy material for the gradual development of the subject. Begin each new subject with sentences in which the grammatical relation is most obvious. With each review, add sentences in which the difficulty is greater or the grammatical relation less obvious. Thus, the verb relation is most readily seen in verbs of one word expressing action, least obvious in the forms of the verb "be"; the noun relation is most clearly seen in names of children and objects in the room, least obvious in the names of qualities and abstractions. Do not present many difficulties in one lesson. The Grammar generally quotes sentences from good literature too difficult in thought and wording; these, however, may be used for final drill, the thought relation having been developed from simple sentences such as children read and speak.

Use "modify" only, not "qualify" and "limit." Omit kinds of nouns except common, proper, and collective; kinds of adjectives except proper; all kinds of adverbs.

Give much attention to the larger thought relations of the sentence. As soon as studied, apply the thought relations to the better interpretation of language in all other subjects.

Most of the composition indicated in the text-book should be omitted, as better material for composition will be found in connection with Geography, Literature, and History, and business forms.

Not more than two lessons per week should be given to technical Grammar, the remainder to oral and written composition.

SEVENTH YEAR.

The following and other lessons from State Grammar may be used to teach the subject: 1, 2, 4, 6, 7, 9, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 24, 27.

A SEVENTH GRADE.

Distinguish sentence from mere group of words; thus, The boys play ball, Playing ball in the park, The girls went to school, The girls were going to school, When we went home, When we went home it was dark. Continue such drill till children *feel* completeness of statement, and complete sentences flow from tongue or pen. Repeat such drill whenever composition work shows need of it.

B SEVENTH GRADE.

Teach subject and predicate in simple sentence, subject and predicate being in usual order, as: Birds fly, Boys play ball. Develop the idea of modifiers by expanding simple sentences, thus: The boys play ball, The large boys play foot-ball, The large boys of our school play foot-ball in the park, The large boys who attend our school play foot-ball in the park in pleasant weather, The large boys attending our school play foot-ball in the park when the weather is pleasant, When the weather is pleasant the large boys of our school play foot-ball in the park, etc. Tell whether each new modifier adds to the subject or to the predicate. Teach bare subject, bare predicate, entire subject, entire predicate in sentences like above.

Teach nouns, personal pronouns, verbs in most easily recognized forms. *Much drill.*

EIGHTH YEAR.

The following and other lessons from State Grammar may be used to teach the subject: 24, 38, 41, 42, 29, 50, 51, 54, (57 and 58 omitted but method applied to study of Horatius), 61, 64, 65, 67, 71.

A EIGHTH GRADE.

Review subject and predicate. Teach subject and predicate in inverted sentences, as: The house stood under the trees, Under the tall tree by the river stood the house of the farmer. "Did what?" "Stood," "What Stood?" "House." Add modifiers to subject and predicate, making the sentences longer. Find the modifiers of subject and predicate but do not classify either as parts of speech or as phrases and clauses.

Review nouns, pronouns and verbs, adding more difficult forms. Teach verb phrases. Teach complements.

B EIGHTH GRADE.

Teach to recognize adjective, adverb, preposition, co-ordinate conjunctions (and, or, but), interjections in simplest forms and uses.

Teach the helpers used with the three forms of the verb (present, past, participle), and apply to the following verbs:

Used alone or with <i>one</i> of these helpers: do, did, may, can, must, will, shall, could, would, should.	Means past time and is used <i>without</i> a helper.	When any <i>one</i> of these helpers is present: am, are, be, being, been, have, having, has, is, was, were.
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see	saw	seen
go	went	gone
come	came	come
write	wrote	written
break	broke	broken
do	did	done
drive	drove	driven
sit	sat	sat
set	set	set
lay	laid	laid
lie	lay	lain

Keep these forms before the children on blackboard or in composition books and refer to them constantly in correcting oral and written language. Teach them to correct their own errors by referring to these forms. Have forms written in the proper column indicating the reason for the same, thus:

He <i>can</i> write.	He wrote (past).	He <i>had</i> written.
She <i>will</i> speak.	I spoke (past).	He could <i>have</i> written.
They speak (present).	He went (past).	I <i>had</i> spoken.
We <i>shall</i> go.	John came (past).	It <i>was</i> spoken.
		They must <i>have</i> spoken.
		<i>Having</i> gone.
		They must <i>have</i> gone.

NINTH YEAR.

The following and other lessons from State Grammar may be used to teach the subject: 2, 58, 85, 156, 21, 127, 128, 129, 83, 84, 100, 72 (omit 73 and 76), Note to 76, 109, 102, 103, 104, 105, 106, 107, 108, 110, 111, 112, 113, 114,

115, 120, 121, 125, 126, 131, 132, 133, 185, 188, (apply to study of literature).

Review verbs, adding more difficult ones. Teach verbals in contrast to verbs: Boys play ball, The boys playing ball, We went to town, Having gone to town. "Play" and "went"—say it (or assert); "playing," "having gone"—mean it (or imply).

Divide verbals into participles and infinitives *according to form*. (Infinitive—to see, to have seen; participle—seeing, seen).

Review nouns and pronouns, principal parts of verbs and use list of irregular verbs in back of grammar.

Teach mode and tense of the verb, and principal parts of common irregular verbs. Teach practical use of the subjunctive.

READING AND LITERATURE.

Reading is perhaps the most important study in the Evening School. The lack of reading ability is the greatest stumbling block to all of the studies. Every subject taught in the Evening Schools should be a reading lesson. The teacher should be sure that the class can read correctly and well all examples in arithmetic, all sentences in grammar, before assigning them for study. All history and geography should be taken first as reading lessons, and when these can be read well they may be assigned for study.

Much attention should be given to oral reading. Good oral reading should lead to good silent reading. Frequently test the power of silent reading by assigning a paragraph to be read, then told with closed books. With open books and oral reading, correct the faults and errors of the silent reading.

Read much; do not spend time on subtleties of thought and feeling beyond the development of the children. Do not spend much time in classifying figures of speech in literature, but call attention to those figures which give either strength or beauty to the style.

Punctuation marks indicate grammatical relations, not pauses, inflections, etc. They often coincide, but pauses and inflections are determined by the sense, not by marks. Give attention to phrasing. (See Clark, "How to Teach Reading.")

Too rigid requirement of "looking off" the book hinders good reading. The eye should run ahead of the voice to get the meaning. Unless class are very ready readers, or very familiar with selection, "looking up" causes loss of place or of meaning.

Let criticism be such as will aid in clearer grasp and better presentation of thought; let it note *excellencies* as well as suggest remedies.

Make reading interpretative, not imitative. Use concert drill to develop qualities of voice and emotional expression. Boys do not like to "show off." There is not time for enough individual voice drill.

In assigning lesson prepare carefully for its study by class. Put on board difficult words and drill in pronouncing them. Give

meanings too difficult for children to find readily. Teach to get meaning from context when possible. Give a few words each day to find from dictionary; train to apply various meanings of word to the sentence and to select an appropriate one. Sometimes study with class an entire lesson before assigning to them for study at seat; sometimes read a difficult lesson or paragraph through to class in assigning lesson for study. Often pupils spend the entire study time getting wrong impressions which recitation is too short to eradicate. Use concert drill for difficult pronunciation and expression.

By every means encourage children in habits of reading. Question occasionally on important topics of current history; call attention to important articles in papers and periodicals. Bring school work into touch with real life; printer's ink helps to do this.

The Evening School should make children more efficient for the work of life, but it has an equally important duty of teaching them how best to enjoy their leisure. In a short time they will be through with Evening School, then evenings, Sundays and holidays will be at their disposal. Unless school has given them something of culture, taste and refinement, some love of good books, some liking for music and art, hours of leisure may prove a curse rather than a blessing. History and geography must be taught so as to awaken an abiding interest in current events; literature must be so taught as to deepen the love for the true, the beautiful and the good. Thus the daily work is not an end in itself, but a means to a proper employment of leisure. The ability to read, and the taste for good reading is the most important gift of the school.

Not a large amount of time can be given to literature in the Evening Schools, but what can be given should be employed to best advantage. Doubtless classes in grades four to seven can not study all the selections in the reading books as indicated. The teacher must select those best adapted to class study; others may be read to the class while they follow with open books. Reading aloud to children is one of the best ways of inspiring taste and love for good literature.

The *State Third and Fourth Readers* are to be purchased by the children. A larger use should be made of the supplementary reading *Stepping Stones to Literature* will be furnished by the school.

In the B Seventh, Eighth and Ninth Grades several options are offered, as conditions vary greatly in different schools. The teacher will select the work to be studied and instruct the class what edition to purchase, as indicated under the particular grade.

A FOURTH GRADE.

These pupils have finished the third year in the day school.

1. *State Third Reader* from page 50 to 100.
2. Supplementary reading—*Stepping Stones to Literature Third Reader* to page 78.

B FOURTH GRADE.

1. *State Third Reader*, pages 100 to 175.
2. Supplementary reading—*Stepping Stones to Literature Third Reader*, page 78 to 147.

A FIFTH GRADE.

1. *State Third Reader*, pages 175 to 262.
2. Supplementary reading—*Stepping Stones to Literature Third Reader*, pages 147 to 222.

B FIFTH GRADE.

1. *State Fourth Reader* to page 79.
2. Supplementary reading—*Stepping Stones to Literature Fourth Reader* to page 84.

A SIXTH GRADE.

1. *State Fourth Reader*, pages 79 to 168.
2. Supplementary reading—*Stepping Stones to Literature Fourth Reader*, pages 84 to 159.

B SIXTH GRADE.

1. *State Fourth Reader*, pages 168 to 268.
2. Supplementary reading—*Stepping Stones to Literature Fourth Reader*, pages 159 to 249.

A SEVENTH GRADE.

1. *State Fourth Reader*, pages 268 to 374.
2. Supplementary reading—*Stepping Stones to Literature*, pages 249 to 322.

B SEVENTH GRADE.

Any one or two of the following:

1. *Lamb's Tales from Shakespeare* (Maynard's English Classic Series).
2. *Kings of the Golden River* (Heath's Home and School Classics); *Lays of Ancient Rome* (Five Cent Classics).
3. *Benjamin Franklin's Autobiography* (Riverside Edition, Part I).
4. *Miles Standish* (Ten Cent Classics).

A EIGHTH GRADE.

Any one or two of the following:

1. *Selections from Eleven American Authors* (Riverside Series, No. 89, Extra—N).
2. *Rip Van Winkle* and *Sleepy Hollow* (Graham's Practical Aids to Literature, No. 1).
3. *Longfellow Leaflets*, "Building of Ship" and shorter poems (Riverside Series).
4. *Webster's Bunker Hill Monument* (Riverside Series, No. 56).

B EIGHTH GRADE.

Any one or two of the following, to be purchased by the pupils:

1. *Industries of To-Day*.
2. *Hawthorne's Wonder Book I* (Riverside Edition).
3. *Scott's Lady of the Lake* (Ten Cent Classics, Educational Pub. Co.).
4. *Lincoln's Gettysburg Address and Other Papers* (Riverside Series, No. 32).

A NINTH GRADE.

Any one or two of the following, to be purchased by the pupils:

1. *Merchant of Venice* (Ten Cent Classics, Educational Pub. Co.).
2. *Evangeline* (Riverside Series).
3. *Dickens' Christmas Carol* (Ten Cent Classics).
4. *Webster's Reply to Hayne* (No. 122, Riverside Series).

B NINTH GRADE

Any one or two of the following:

1. *Triumphs of Science*.
2. *Snow Bound* (Riverside Series).
3. *Shakespeare's Julius Caesar* (Ten Cent Classics, Educational Pub. Co.).
4. *Carl Schurz's Abraham Lincoln* (Riverside Series, No. 133).

INTRODUCTION TO GEOGRAPHY.

Geography treats of the earth in its relation to man. It should give the child many facts useful for business or general intelligence. It should teach him how and where to find additional facts when needed.

These facts, however, should not be isolated, but should be taught in causal relation, thus making Geography elementary science.

The forces of nature largely control geographic conditions, but human influence has nearly or quite as great a place. Man has changed the vegetation and animals of a large part of the globe. The use which man makes of natural resources is governed largely by economic considerations. Thus physical geography and economics form the background of Geography. These may be taught to children in elementary form.

The forces which have shaped the great features of the earth may be observed all about us. The influence of streams in erosion, transportation and deposit of sediment, the formation of hills, valleys, canyons, deltas, waterfalls, etc., may be as well seen and as well understood in the rivulet as in the mighty river. For the child may in a few minutes trace every part of a river system. Let his imagination magnify this and he has "The Father of Waters." Mapping this outdoor geography first with sand, then with chalk, will give a key to the proper interpretation of maps.

The elements of commerce and of economics are as easily observed as the forms of land and water. The principles governing the commerce of nations are involved in the buying and selling which the child sees daily. Division of labor studied in the most elementary form in the home, the school, establishments of few workmen, and, later, in larger establishments makes the child understand the cheapened cost of articles produced by the united efforts of many skilled laborers. It is then clear that cheapened transportation enables communities to specialize in the production of that article for which their natural conditions are best suited, and that all other articles are obtained most cheaply by exchange. Manufacturing and trade centers follow as necessities from this larger division of labor, and commerce is no longer

an independent element, but an outgrowth of all other occupations. History may be seen as an outgrowth, in large part, of geographic conditions.

Maps are used for study and for reference. The study map should contain but few names. Children should be trained to use reference maps by looking up many map questions which they are not required to remember. All surfaces should be first studied from relief maps. Do not exaggerate elevation more than is really necessary.

Outline maps without names are useful aids in study. The child may look from his book to the outline map to test his knowledge. Such maps may be put on the blackboard with stencil. Children should not draw maps from the book, copying all the details. Free-hand sketching of maps giving good proportion and most important features is all that should be attempted. This should generally be done with the teacher's drawing as a guide.

Product maps may be made on the blackboard, black paper or window shades, with colored crayons. These should give only the most important products and their general distribution. Children must understand that the color used in a region represents the thing produced there in *excess* of local needs. Everything produced cannot be represented. The area of a product is indicated by the extent of space colored; the quantity of product may be indicated roughly by the amount of color put on that space.

The following colors are suggested for product maps; others may be adopted as needed: Cotton and rice, white; grains, yellow; grazing, light green; forest, dark brown; manufactures, light gray; coal and iron, black; other minerals, red brown; tobacco, sienna brown; fish and oysters, blue; wool, blue white; oranges, orange; other fruit, pink; dairy products, white streaked; petroleum, dark gray.

Many maps not furnished by the school will be found useful to the teacher. These may be made with crayon on black paper or window shade, and used again and again. Such are maps representing winds and ocean currents, rainfall, temperature, population, products and trade routes. Some of the maps in the books will be more useful if thus enlarged, so that the entire class may see them at once.

The *Introductory Geography* is to be used largely as a reading book, the teacher impressing upon the minds of the children the most important things on the map and in the text. Part I contains much interesting matter, which must be explained and locally applied by the teacher.

The *Grammar School Geography* is both a text-book and a reference book. The large print contains matter which every intelligent person should know. Some of the fine print may be read in class and discussed with open book, but should not be learned. The child will thus have some acquaintance with this material and know where to find it when needed.

The facts of Physical Geography are told in their special application to each continent studied. The explanations are left for the Ninth Grade, where Physical Geography is made a special study.

Evening school classes cannot be taken on excursions for outdoor geography, manufacturing and commerce, but a few well-directed questions from the teacher will recall what they have already observed and lead to closer observation as they go about their daily work. Such outside knowledge should be constantly recalled as an apperception mass on which to base new knowledge.

GEOGRAPHY.

B FOURTH GRADE.

Continue the study of Outdoor Geography begun in day school.

Teach orally simple applications of division of labor seen in the family, the school, a small store, a street car and the erection of a building. Note that each laborer becomes very skillful by confining himself to one thing, and that many laborers combine their efforts to produce the better or the cheaper article. Note what each laborer performs in the erection of a building. Where do the materials used in the building come from and how are they transported? What articles of food and clothing does the city obtain from the country? What does the city do in return for these articles? Talk of a few manufacturing or wholesale houses nearest your home or place of work.

Discuss division of labor in some larger establishment, such as Cannery, Iron Works, Woolen Factory, Planing Mill, Department Store, etc.

Continue the study of Outdoor Geography. By questions direct observation of natural phenomena.

The teacher will read to the children the first five sections of Part I, *Introductory Geography*, making local application when possible. If the text is not too difficult, the teacher may have the children purchase the book and use these sections as reading lessons. The pictures will help fix the interest.

All the Geography of this grade should be made the basis of oral and written composition. It will give the children thoughts to express and they should be guided to a better expression. Correct most common errors of speech and written language.

A FIFTH GRADE.

Use as a reading book the *Introductory Geography*, Part I, Sections 6 to 11 inclusive.

STUDY OF CALIFORNIA.

1. Present relief map of California. Do not over-exaggerate relief. From relief have children study mountains, valleys, slopes, etc.; locate drainage basins and rivers.

2. On relief and wall map locate Cape Mendocino, Point Reyes, Point Arena, Point Conception, Humboldt Bay, San Francisco Bay, Santa Cruz Bay, San Pedro, San Diego Bay.

3. Put on board a map showing prevailing winds, temperature and rainfall. (See California section of the Climate and Crop Service of the Weather Bureau.)

4. Show board or wall map and call attention to rivers and lakes resulting from rainfall and slopes.

5. Teach location of Sierra and Coast Range Mountains, Mt. Tamalpais, Mt. Diablo, Mt. Hamilton, Mt. Shasta and Mt. Whitney; of Sacramento, San Joaquin and Klamath Rivers; of Lake Tahoe and Lake Tulare.

6. In oral discussion have children trace California products found in our stores and markets to parts of State from which they come—fruits (apples, oranges, cherries, grapes, etc.), nuts, raisins, beans, butter, meat, flour, lumber, gold.

7. Make progressive product map, using colored crayon. Discuss regions in which each article is produced and climate essential to it; use pictures and give vivid word pictures of each product region; then teacher color the area on blackboard map, children coloring at blackboard or seats. Why does each region produce chiefly one article? How are other articles secured more easily by exchange? Explain economy in this large division of labor. Compare Robinson Crusoe, Colonial life, life among the Indians.

8. Show growth of trade center in each region (transportation and commerce as producers of wealth).

9. Exchange of goods by railroads, boats, etc.

10. In a broad view of the State, what do we produce more than we need? Where do we send it? What do we get in return? Teach San Francisco as the trade center for *the State*.

Teach California orally, making it the basis of composition, both written and oral. Use 257-283, *Introductory Geography*, for reference and for reading lessons as far as suitable.

If time permits, read from Chamberlain's *How We Are Fed: The Past and the Present, The Story of a Loaf of Bread, How Our Meat Is Supplied, Market Gardening, Dairy Products, Butter Making, The Orange Groves of Southern California, A Visit to a Vineyard*.

B FIFTH GRADE.

1. Locate North America on the globe; note its relation to the Equator, Tropic and Arctic Circle, to other continents and to the oceans.

2. Present North America in relief and study mountains, valleys, slopes from the relief. Do not over-exaggerate relief.

3. Tell facts of ocean currents, winds, pertaining to North America. Do not explain winds and currents. Indicate on blackboard map prevailing winds and ocean currents. (See *Grammar School Geography*, pages 26 and 27.)

4. Put on blackboard rainfall map. (See *Grammar School Geography*, State Series, page 46.)

5. Compare winds and currents, rainfall map and relief map. Where will there be most rivers? In what direction will they flow? Look at wall map. Confirm conclusions.

6. Now study map questions and political divisions on pages 139 and 140.

BROAD STUDY OF UNITED STATES.

Before studying our country in sections give a broad survey of it as a whole. Then as each section is studied its relations to other sections and to the whole will be clearly seen.

Apply on a still larger scale division of labor. This principle has been seen in the home geography, in the building of the house, and in the manufacturing establishment. In these each workman was a skilled specialist. In the study of the State labor was divided among communities according to natural resources, each locality becoming skilled in the production of a special commodity.

From previous study review climate, drainage and soil of the United States.

Trace California products to Eastern markets, thus enlarging the geographic horizon through home interests. What do we receive in return? Where produced?

On the blackboard map mark product regions of the United States, using colored crayons. Begin with most prominent products of California, as wheat, livestock, lumber, fruit. As far as time will permit, give vivid pictures of each region studied. *Tarr and McMurray's Geography*, Book II: *Carpenter's North America*, *King's Picturesque Geographical Readers*, *Youth's*

Companion Reprints (except article on raisins) contain good illustrations and word pictures.

What advantage has each section in soil and climate for its product? How and where obtain other products in exchange? Locate trade center in each region. What are its advantages as a trade center? Put in the great continental lines of railroad. These railroad lines are as important in the map as rivers or coast lines.

The area of a product is indicated by the extent of space colored; the quantity of product may be indicated roughly by the amount of color put on that space.

In a general view of the map, what things are produced in excess of our own needs? Show Boston, New York, Philadelphia, Chicago, New Orleans, San Francisco, Seattle, as trade centers for the country as a whole.

Do not teach boundaries. Do not teach capitals unless important as trade centers. Children should be able to point on outline map to any State named by the teacher, or to name any State pointed to. Children should be able to locate any State in its product region or regions, but should not learn list of exports and imports for each State.

Study United States by sections from pages 140 to 188. Fine print, except review questions, may be omitted or read only.

If time allows, read to the class in connection with the proper groups of States the following chapters from Chamberlain's *How We Are Fed*: Cheese, Fishing Industry, Oyster Farming, A Rice Field, How Sugar Is Made (Cane Sugar, Beet Sugar, Maple Sugar), Salt, Cranberry Bog, Nutting, A Walnut Vacation.

In all the work from *Introductory Geography*, fine print, except review questions, may be omitted or used merely as reading matter.

A SIXTH GRADE.

Complete North America. *Introductory Geography*, pages 188 to 198.

Make product map of Canada, similar to the United States, indicating grain, livestock, lumber, coal and iron, fisheries, gold and any others teachers may desire.

SOUTH AMERICA.

1. Present first on globe in relation to Equator, Tropics, to oceans and to other continents.

2. Show South America in relief. Have children study and describe its form and surface. Compare with North America.

3. *Tell facts* about heat, winds and ocean currents of South America. Do not explain.

4. Present wind, temperature and rainfall maps on black-board (*Grammar School Geography*, page 104).

5. Compare these with relief map.

6. Where would you expect most rivers, fewest rivers, longest and largest rivers, shortest rivers? Show wall map to confirm or correct opinions. Tell children about the size of the Amazon. (*Afloat in the Forest* contains good description.)

7. Result of physical conditions on soil and vegetation.

8. Make colored product map, showing forest products, grain, livestock, minerals, coffee, rice.

9. Difference between North and South America in civilization and industrial prosperity is due in about equal proportions to physical features and to European settlers. Contrast the two continents in physical features. Give briefly history of South America, and compare with North America. Tell children of the early civilization of Ecuador and Peru.

10. Study especially Brazil, Argentina and Chile. The other countries may be passed over lightly.

12. From Chamberlain's *How We Are Fed* read, as time permits: On a Coffee Plantation, A Cup of Cocoa, A Bunch of Bananas. *Our American Neighbors* is good supplemental reading.

EUROPE.

Study Europe after plan similar to that for South America. Children need not draw Europe. The teacher may omit the product map. The general product map of Europe, page 120, and the rainfall maps, pages 26 and 114, of *Grammar School Geography*, may be found useful.

The teacher should give briefly a bird's-eye view of the great historical movements of Europe, from Egypt to Greece, Greece to Rome, Rome to the nations of modern Europe, from Europe

to America. As the more important nations are studied, touch briefly upon their history and place in the world's progress. This work should be given orally and children not required to learn it, as its aim is simply to awaken historical interest. It should not take much time.

Study Europe in the text-book.

A SIXTH GRADE.

ASIA.

Treat Asia in similar manner, putting special stress on physical Geography, India, China and Japan, and Siberia. Other parts of Asia may be passed over lightly or omitted.

AFRICA AND AUSTRALIA.

Treat Africa, Australia and Islands of Pacific in similar manner.

The class may now read and discuss Part II. This will give a summary and general view of the earth as a whole and prepare them for taking up the *Grammar School Geography*.

GRAMMAR SCHOOL GEOGRAPHY.

This book will be used in Seventh, Eighth and Ninth Grades.

The Physical Geography at the beginning of the book will be taken in the B Ninth Grade. It is too difficult for the Seventh. The *facts* of Physical Geography should be used whenever necessary to explain descriptive, political and industrial geography.

This book is both a text and a reference book. In general only the large print should be studied. Children should know where to find things in the small print when needed. The book should be used largely as reading matter—children reading aloud, teacher explaining and enlarging where needed. Only the important facts should be committed to memory. Have much reading for the sake of interest from *Tarr and McMurray's Geography* and from *Carpenter's Geographical Readers*.

Lay great stress on Commercial and Industrial Geography, resulting from division of labor among great product regions. Impress product regions upon the eye by use of colored crayons. Show clearly conditions of modern life which give rise to great commerce. Show how large product regions develop great cities, railroads and steamboat lines.

The results of this study should be to fix firmly in mind important facts and to awaken great geographical interest.

A SEVENTH GRADE.

Study maps on pages 26 and 27 with open books. Do not explain causes of winds and ocean currents. Refer to these maps frequently in the study of each continent. It is advisable to have these maps enlarged on black paper or cloth, so that they may be seen by the entire class at once.

NORTH AMERICA.

1. Locate North America on the globe with reference to Equator, Tropic and Arctic Circle.

2. Present N. A. in relief and study mountains, valleys, slopes from the relief. Do not over-exaggerate relief.

3. Tell facts of ocean currents and winds pertaining to N. A. Do not explain winds and currents. Study from the map winds and ocean currents, pages 26 and 27.

4. Study rainfall map, page 46.

5. Compare winds and currents, rainfall map and relief map. Where will there be most rivers? In what directions will they flow? Now look at wall map. Test conclusions.

6. The class is now ready for the general study of N. A., pages 45 to 49.

Omit supplemental work, Atlantic Plain, Appalachian Mountains, Central Lowland, the Rocky Mountain Highland. Read and explain Pacific Coast region.

7. With open books explain rainfall and climate maps, page 54.

8. Read and explain government. Impress important facts on the memory.

9. Read and explain population and progress, page 57, impressing a few important facts.

BROAD STUDY OF UNITED STATES.

Before studying our country in sections give a broad survey of it as a whole.

Then, as each section is studied, its relations to other sections and to the whole is clearly seen.

Continue to apply on a large scale the principle of division of labor. (See previous grades.)

From previous study review climate, drainage and soil of U. S., dividing it into natural regions.

Make product map of U. S., using colored crayons. Give pictures of life and industry of each section. Show how each section is best suited to its product and how other things are

obtained by exchange. Make distinction between raw material and manufactured goods. Show how power is obtained for manufacturing, largely now from steam and electricity instead of water power. What goods are shipped as raw material, and what as manufactured? Show necessity for trade centers in product regions. What advantage has each for transportation and manufacture? Which are chiefly manufacturing and which distributing points? Put into map on blackboard important railroad lines connecting trade centers. How connected by water?

In outline map children should be able to point to any State named or name any State pointed to. They need not learn boundaries; need not learn capitals unless important as trade centers. They should be able to tell from memory in what product region or regions each State is located, but should not learn list of exports and imports for each State.

Children need not memorize figures or statistics regarding products. In the colored product map each product is indicated in the region in which it is dominant. The color does not indicate that nothing else is produced within that region. Product regions often overlap.

The following colors are suggested for product maps; others may be adopted as needed: Cotton and rice, white; grains, yellow; grazing, light green; forest, dark brown; manufactures, light gray; coal and iron, black; other minerals, red brown; tobacco, sienna brown; fish and oysters, blue; wool, blue white; oranges, orange; other fruits, pink; dairy products, white streaked; petroleum, dark gray.

In connection with the colored product maps of United States use the large print of the pages on Production (pages 57-60).

Read and explain Commerce and Wealth, page 60. Make clear conditions which give rise to commerce. Show how great natural resources, machinery, division of labor and intelligence of people increase productive power. (Good composition subjects.)

Explain standard time, page 61.

Teach industrial sections, page 61. Have children fill in with colored crayons on outline maps.

STATES BY GROUPS.

After this broader survey of U. S., States may be taken by groups as presented in the book. As each group is studied, its relation to the whole will be better seen. From the product map

it will readily appear where New England secures its raw material for manufacture and where it finds its markets; where the Mississippi Valley sells its breadstuffs and meats and where it secures its manufactures. Keep these broader relations in mind, using details to impress general principles. Children may read all the large text, but should not commit it to memory. They should know how to use text and maps for reference in case of need. Take only the leading cities and occupations in each State or section.

I. *Northeastern Section.*

Study general description only, page 63; omit study separate States, pages 63-65. Locate Boston, Portland, New Haven, Lowell, Bangor, Gloucester. Read as much of these cities as time will permit from the geography and supplementary books.

II. *The Northern Section.*

Study general description, pages 66-68.

1. The Northern Appalachian States.

Study general description, page 68. Locate New York, Philadelphia, Baltimore, Washington, West Point, Pittsburg, Jersey City, Annapolis, Richmond. Read as much about these cities as time will permit from geography and supplementary books.

B SEVENTH GRADE.

2. Ohio Valley and Upper Lake States.

Study general description only. Locate Cleveland, Cincinnati, Indianapolis, Chicago, Detroit, Milwaukee. Read as much about these cities as time will permit from geography and supplementary books.

3. States of the Missouri Basin.

Study general description only, page 75. Locate Minneapolis, St. Paul, St. Louis, Kansas City, Omaha. Read as much as time will permit regarding these.

III. *The Southern Section.*

Study general description only, pages 78-79. Locate Charleston, Atlanta, Mobile, Vicksburg, Nashville,

New Orleans. From the geography read as much of these cities as time will permit.

IV. *The Plateau Section.*

Study general description only, page 85. Locate Denver, Salt Lake City, Carson City, Reno, Phoenix, Helena. Read as much of these cities from geography and supplementary books as time will permit.

V. *Pacific Section.*

Study general description, page 89, and large print of California, Washington, Oregon and Alaska. Review California, studied in the *Introductory Geography*, using the colored product map. Study the large print of Hawaii, Samoa, page 153; Porto Rico, page 100; Philippines, page 142.

A EIGHTH GRADE.

COUNTRIES NORTH OF UNITED STATES.

Study the Dominion of Canada, omitting the fine print and cities, except Montreal, Quebec, Ottawa, Halifax, St. John, Vancouver. Read to the children from *Our American Neighbors*, giving vivid impressions of life, industries, products and especially of the winter sports. The children will find much interesting reading in *Carpenter's North America*. Teacher may omit Danish America, or, if time permits, read to children from *Carpenter's North America*.

COUNTRIES SOUTH OF UNITED STATES.

Study Mexico, omitting small print and laying stress only on most important products. How is Mexico connected with U. S. by rail? What steamship lines from San Francisco to Mexico?

Take map questions and first two paragraphs of Central America.

Study Cuba, page 100. Omit the rest of West Indies. Omit pages 100a, 100b, 100c, 100d, 101. Colored product maps of Canada and Mexico will impress facts upon minds of children as the printed page cannot do.

Compare government of Canada with United States. Explain "local self-government." How does this keep Canada loyal? England learned the lesson of local self-government for her col-

onies by the American Revolution. What would the result have been had England granted local self-government to her thirteen colonies? Correlate with history. Present through talks and parallel reading. Do not give additional matter to be memorized.

In similar manner contrast government of Mexico with United States. The difference in success of the two republics is largely a difference of race. The life of President Diaz is full of thrilling incidents. If time permits, this would be an interesting subject for biographical composition. The mere telling of the story to the children will appeal strongly to the heroic in them.

SOUTH AMERICA.

1. Present first on globe in relation to Equator, Tropics, to oceans and to other continents.

2. Show South America in relief. Have children study and describe its form and surface. Compare with North America.

3. *Tell facts* about heat, winds and ocean currents of South America. Do not explain.

4. Study wind, temperature and rainfall maps (page 104).

5. Compare these with relief map.

6. Where would you expect most rivers, fewest rivers, longest and largest rivers, shortest rivers? Show wall map to confirm or correct opinions. Tell children about the size of the Amazon. (*Afloat in the Forest* contains good description.)

7. Result of physical conditions on soil and vegetation.

8. Train children to locate on map of South America Equator, Tropic, ocean currents, prevailing winds.

9. Make colored product map showing forest products, grains, livestock, minerals, coffee, rice.

10. Difference between North and South America in civilization and industrial prosperity is due in about equal proportions to physical features and to European settlers. Contrast the two continents in physical features. Study history of South America from a text-book. Supplement by outside reading. Compare with North America. Tell children of the early civilization of Ecuador and Peru.

Refer to Chamberlain's *How We Are Fed*. Read: On a Coffee Plantation, A Cup of Cocoa, A Bunch of Bananas.

Compare product maps of North and South America. What things do we receive from South America? What do we send to South America? In what do we compete with Europe in South

American markets? (Manufactures.) In what do we compete with South America in European markets? (Grain and grazing products.) How is this commerce carried on?

After this broad study of South America the class is ready for the text. This is to be used in the manner suggested for Sixth Year.

Study map questions, page 103, and the large print of the general description of South America, pages 103 to 108. Learn the most important facts about Brazil, Argentina and Chile, omitting the other South American republics.

B EIGHTH GRADE.

EURASIA.

Find on the globe and note north and south, east and west extent. Study rainfall and temperature and ocean currents, but do not explain causes. Show a printed relief map (*Frye's Geography*) and be sure that children can interpret the physical map.

Be sure the children understand the meaning of maps on page 114. Teacher need not make colored product maps of Eurasia. Children can now interpret printed page without such aids.

Study Eurasia from the text, pages 113-117, taking coarse print only and the most important of the map questions, pages 110 and 112.

EUROPE.

Give as much attention to the history of Europe as time will permit. (See Fifth Grade.) The purpose is not to memorize facts of history, but to awaken historic interest. Many of the children will not attend high school, and so will miss systematic study of European history, but interest awakened in Geography may lead to subsequent reading. It may be possible here to awaken some interest in literature and art.

It is not necessary to make relief or product maps, though colored crayons might perhaps impress the products of certain sections. Products may be somewhat generalized as on page 120.

Tell the facts of prevailing winds, etc., and let children explain climate of different parts of Europe. Contrast with United States.

Study the large text for Europe, using the fine print for reference matter, vivifying with concrete pictures and good descriptions from parallel and supplementary reading. Try to bring

children into vital touch with life and conditions of the old world.

Make clear the division of labor among communities according to natural resources or advantages, and the necessity of exchange resulting from such high specialization. Bring out European trade with North and South America. Contrast conditions of life in European countries with conditions in our own country. Contrast governments with government of United States. In what respects is the United States superior and to what does it owe its superiority?

Study the general description of Europe (large print) from page 117 to 122, tracing out the map questions on pages 119 and 120 with open books and fixing in memory the most important.

Study quite thoroughly (large print) British Isles, German Empire, Holland, Switzerland, France, Spain, Italy, Greece, Russia. Take the most important of the map questions; locate most important commercial cities.

Teach the location of the other countries of Europe and one or two important facts about each.

Have a large amount of supplementary reading from *Modern Europe* and *Carpenter's Europe*. Use for reading lesson the historic sketch of Europe from pages 119 to 121. Give children references to other interesting historical matter.

A NINTH GRADE.

ASIA.

Study climate, rainfall and population maps of Asia. Study the map questions, page 135. Take the general description of Asia; pages 135-136.

Compare industries, labor, machinery of Asia (page 135) with those of United States (page 59). Bring out differences in race, religion, education, and effect of these on civilization. Contrast Japanese with other Asiatics. To what is difference due? What seems to be the future of China and Japan?

Study the following countries, using the large print and as much of the fine print as time will permit:

1. Asiatic Russia.
2. Asiatic Turkey.
3. India.
4. Chinese Empire.
5. Korea.
6. Japan.

Locate the other countries on the map and learn one or two important facts about each.

Give the children a talk on the influence of Turkey, Arabia, Persia and Palestine in the development of modern American and European civilization.

The cause, progress and probable result of the Russo-Japanese War is an excellent subject for class discussion.

Carpenter's Asia and *Towards the Rising Sun* offer much valuable supplemental work.

AFRICA.

Study wind, current and rainfall maps with reference to Africa. Compare rainfall map of Africa and South America. Explain the difference. Compare the Mississippi, the Amazon, and the Nile with reference to length, volume of water, tributaries. Give reasons. Compare North Central Africa, Mississippi Valley, Amazon Valley with reference to rainfall, climate, vegetation, etc. Contrast Africa north of the Equator with Africa south of the Equator. Reasons.

Interest children in the ancient history of Egypt. Bring out recent modern progress in South Africa.

Give some account of great African explorers. From Africa's recent modern development judge of its future.

Parallel reading from *Tarr and McMurray's Geog.*, Book III. Good supplementary reading will be found in Book VII of *The World and Its People Series. Views in Africa*, also in *Carpenter's Africa*.

Study the large print of the text on Africa, pages 145-149, using for reading matter as much of the small print as seems important.

AUSTRALIA AND ISLANDS.

Make a careful study of Australia (large print), its physical features, its climate, peculiar animals and plants, its industries, its history, people and government.

Contrast the constitution of Australia under its recent Federation (local self-government) with that of the United States.

Bring out the social and industrial conditions of New Zealand.

Bring out the rapid development of Australia and New Zealand and their rising importance.

Supplementary reading—*Carpenter's Australia* and *Tarr and McMurray's Geography*, Book III. *Australia* (The World and

Its People Series) contains much interesting matter on the Islands of the Pacific.

CALIFORNIA.

Make a thorough study of California, giving special attention to its industries and commerce. Trace the products of California to the markets of the world. This prepares for a general review of the industrial and commercial geography of the world. Enlarge this subject as much as time will permit. Show division of labor in its largest relations—what each nation does to meet the world's needs, and how these commodities are exchanged.

Use colored product maps of the world as far as possible, showing how success or failure in one part of the world affects other parts; how failure of wheat crop in Argentine raises price of wheat in United States. Refer to commercial maps in the appendix of Geography, *Adams' Commercial Geography* and *Trotter's Geography of Commerce*.

Fairbank's California contains much information in most convenient form. Take text on California in geography, omitting fine print.
information in most convenient form. Take text on California in back of Geography, omitting fine print.

B NINTH GRADE

This term will be given to the study of Physical Geography. The children have learned many of the facts of Physical Geography, and have applied them in the study of the continents, but have not had explanations. Use the *Grammar School Geography*, pages 5-44 as a text, referring, where fuller statements are needed, to *Tarr's Physical Geography*. This term's work will give a more complete view of the earth as a whole, and will constantly refresh in the minds of the children what they have learned in previous grades. It will lay a foundation for the sciences to follow in the high school.

HISTORY.

In the fourth grade of the Evening Schools, the time devoted to History is to be spent in reading to and with the pupils stories, chiefly biographical, to awaken an interest in the work that will follow in the higher grades. In the fifth and sixth grades the Introductory History of the State Series is to be used by the pupils as a reader. The teacher will summarize and amplify the work in talks to the class.

In the seventh, eighth, and ninth grades the Grammar School History will be in the hands of the pupils, and the nature of the work will be, in general, class study with open books under the direction of the teacher.

The most important ends of the teaching of History are the development of a desire to continue historical reading, and the cultivation of the power to weigh and discriminate between the various motives and springs of action which have led to the complex adjustments of our modern civilization.

The purpose of Civics is to give the children definite and concrete ideals and standards of conduct with relation to the affairs of human society, and to give them a knowledge of those forms and functions of government which they need to understand in the exercise of political privileges and duties.

A FOURTH GRADE.

The work of this year offers two parallel approaches to the later study of history: *biographical history* and *local history*.

The biographical history will be covered by the stories from American colonial and pioneer life selected from material the teacher may choose to use for her story telling.

The local history to be studied is that of San Francisco and its immediate vicinity. It should be presented in close connection with the work in home geography.

All schools should not study the same local history topics. The spots of historic interest are not equally known and available to the various children, nor are they equally significant in the history of San Francisco. Two lists of topics taken from Mrs. O'Neal's *Topics for Local History Work* are suggested.

The first should be used by all schools. From the second, four or five particular topics should be selected by particular schools, as the material for study and observation is within reach of the school or of peculiar significance to that portion of the city.

TOPICS FOR GENERAL USE.

1. Indians who once lived here; their former modes of life.
2. The Spaniards; where from, and reasons for coming to this peninsula.
3. The Mission Dolores; location and description of church and cemetery.
4. Conditions (geographic, climatic) which made San Francisco a favorable place for settlement.
5. Houses of Spaniards; of what constructed, how built and how covered.
6. Occupation of the people who came here first. Small settlements.
7. The Presidio; location and present use; meaning of word; how used by Spaniards.
8. The American settlement at Yerba Buena; location and occupation of the people.
9. Telegraph Hill, Russian Hill, Rincon Hill and Bernal Heights; manner in which names were obtained and use in early days.

TOPICS FOR SELECTION.

1. Portsmouth Square; a few of the historical scenes of which it was the center.
2. Meiggs' Wharf and Long Wharf; their importance in early days.
3. Mission Creek and Potrero; situation and use.
4. Location of first house built by an American (Captain Richardson); location of American settlement.
5. Population in 1842 (50) and in 1860 (50,000); cause of the rapid increase. The effect of the discovery of gold on the development of the city.
6. Streets named for pioneers; streets which have been built on land filled in, and where the bay formerly came; change in the water front.
7. Old houses now standing that came around The Horn.
8. Opening of Market street; steam paddy; leveling of the sandhills; development of the Western Addition; horse cars, cable cars and electric cars.

HOLIDAYS—Continue the observance, in some simple manner, of such days as Thanksgiving, Christmas, Washington's Birthday, Lincoln's Birthday, Decoration Day and Admission Day.

CIVICS—Wherever the history material permits, emphasize the personal qualities manifested in the lives of great men which have contributed to the country's welfare.

Bring to the attention of the children by talks and discussions some of the easily understood principles of government, such as:

1. The meaning of the word "government" and the necessity for some form of it.

2. The family and its government.

3. The schoolroom and its government.

4. The playground and its government.

See Dole, *The American Citizen*, Chapters I, II, III.

B FOURTH GRADE.

The work of this grade continues the two parallel approaches to the later study of history: *biographical history* and *local history*.

BIOGRAPHICAL HISTORY.—The biographical history will be covered by the stories from American colonial and pioneer life selected from material the teacher may choose to use for her story telling.

LOCAL HISTORY.—The local history to be studied is that of California, with such Pacific Slope history as is necessary to give a proper setting. It should be presented in close connection with the study of the geography of the State.

The following topics are suggested and should be among those receiving attention:

1. Voyages of Balboa, Magellan and Drake.

2. Cabrillo's discoveries along the Pacific Coast.

3. The discovery of San Francisco Bay.

4. The Indians of California; their former modes of life.

5. The founding of the Missions. (Indicate location on an outline, sandboard, or wall map, and on the map of the State Elementary Geography, p. 28. Use pictures of a few Missions.)

6. The Mission Indians; manner of living; treatment by the Spanish.

7. Towns founded by the Spanish about the Missions; mode of life among the early Spanish families.

8. How California became a part of the United States; capture of Monterey and San Francisco.

9. Occupation of Americans who came before 1848; trade in hides, tallow, etc.

10. Discovery of gold; mining excitement; ships to San Francisco and rush to the mines; rapid growth of the city; mixed population; lawlessness; vigilance committees.

11. The Donner party as typical of crossing the plains.

12. Other ways of coming to California in the early days.

13. The opening of the first transcontinental railway.

14. The change from a mining to an agricultural State.

HOLIDAYS.—Continue the observance, in some simple manner, of such days as Thanksgiving, Christmas, Washington's Birthday, Lincoln's Birthday, Decoration Day and Admission Day.

CIVICS.—Wherever the history material permits, emphasize the personal qualities manifested in the lives of great men, which have contributed to the country's welfare.

Continue the talks and discussions on some of the easily understood principles of government, such as:—

1. The idea of a city and its government.

2. The idea of a State and its government.

3. The idea of the government of our country.

4. Titles and names of the chief officer in each of the three.

Correlate with geography. Consult Dole's *The American Citizen* for ideas as to this work.

A FIFTH GRADE.

In the preceding grades the work has been largely biographical.

In this grade the work is to take on a larger range of facts and events. The biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than before. The *Introductory History* (California State Series) is to be bought and used to end of p. 94. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text, though pupils should be able to reproduce, orally, the substance of the stories. The work of the teacher should be to bring out and reinforce the pictures drawn so as to enrich the mind of the child.

Correlate the history work with that of geography by looking up the localities mentioned.

CIVICS.—Wherever possible, get a standard and ideal of

conduct from the lives of the great Americans treated in the history reader, such as Roger Williams.

Discuss the necessity of government in connection with the story of John Smith, the Landing of the Pilgrims, and others.

B FIFTH GRADE.

In this grade the work is to take on a larger range of facts and events. The biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than before. The *Introductory History* (California State Series) is used through the story of Washington, p. 186. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text, though pupils should be able to reproduce, orally, the substance of the stories. The work of the teacher should be to bring out and reinforce the pictures drawn so as to enrich the mind of the child.

CIVICS.—Wherever possible get a standard and ideal of conduct from the lives of the great Americans treated in the history reader, such as William Penn, Benjamin Franklin and George Washington.

Discuss the necessity of government in connection with the story of John Smith, the Landing of the Pilgrims, and others. In connection with the colonies, discuss in simple terms, local government as found in the colonies and centralized government as found in the King and Parliament.

A SIXTH GRADE.

In the history work of this grade the biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than in the fifth grade. The *Introductory History* (California State Series) is to be used from p. 186 to p. 277. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text. The work of the teacher should be to bring out and reinforce the pictures drawn so as to enrich the mind of the child.

Correlate the history work with that of geography by looking up the localities mentioned.

CIVICS.—Wherever possible get a standard and ideal of conduct from the lives of the great Americans treated in the history reader, such as George Washington, Daniel Boone, Andrew Jackson.

In connection with the chapter on the Revolution, discuss the following topics in simple form:

1. Who makes the laws and by what right.
2. The right of the King and Parliament to govern America.
3. The state governments of the free colonies and why they joined in a national government.

B SIXTH GRADE.

In the history work of this grade the biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than in the previous grade. The *Introductory History* (California State Series) is to be completed from p. 277. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text. The work of the teacher should be to bring out and reinforce the pictures drawn so as to enrich the mind of the child.

CIVICS.—Wherever possible get a standard and ideal of conduct from the lives of great Americans treated in the history reader, such as Abraham Lincoln and U. S. Grant.

A SEVENTH GRADE.

With this grade a more systematic study of American History begins. In the previous grades, the biographical element was dominant. Now the larger movements of history are studied directly as such, though biographical and narrative material are still to be used to make the material studied real and interesting.

The work of this grade will cover the following movements or large topics:

- I. Europe finds America (2-9).
- II. Spain takes possession of the new world (11-14).
- III. England rivals Spain and plants herself on the Atlantic Coast (15-53, omitting 46).

The *New Grammar School U. S. History* (California State Series) is used for the first time in this grade. The topics cover

the first fifty-nine pages. The numbers in parenthesis refer to the sections in the State History.

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The devotion of Columbus to a scientific idea.

The missionary work of the Spanish priests among the Indians.

The religious devotion of the Pilgrims.

The religious tolerance of Roger Williams.

The various forms of government represented in the colonies and the mother countries might be brought out, discussing particularly the monarchical form of government.

B SEVENTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

IV. France, the Third Rival, takes Control of the St. Lawrence and the Mississippi (54-56).

V. The Struggle between the English and the French (57-90, omitting 79 and 81).

VI. The Disagreement of the English Colonies with the Mother Country (91-128, reading only 91-100, and omitting 105 and 106).

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from p. 60 to p. 123. The numbers in parenthesis refer to the sections in the State History.

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage

vantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The treatment of the Indians by the French and English.

The employment of savages in civilized warfare.

The patient resistance of the colonists to the mother country.

The difference between the democratic and monarchical forms of government as brought out in the assemblies of the colonists and the imposed rule of Royal governors should be explained. The resistance of the colonists is to be explained on the basis of Englishmen fighting for acknowledged English rights.

A EIGHTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

VII. The Struggle for Independence (129-162, reading only 139-162, omitting 148-150 and 152).

VIII. The Struggle for a Government (163-226, reading only 185-208, omitting 166-168).

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from p. 126 to p. 205. The numbers in parenthesis refer to the sections in the State History.

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The patient endurance of Washington at Valley Forge.

The treason of Arnold at West Point.

The evil effects of partisanship in Congress.

The sacrifice of special interest to general good in the Constitutional Convention.

A presentation and discussion of the main points of our Federal Constitution may be best made here in connection with the attempt to form a government. The following outline might be studied in connection with a reading of the Constitution:

THE NATIONAL GOVERNMENT.

I. *Congress.* (Legislative Department.)

1. Meetings.
 - a. First Monday of every December.
 - b. Extra sessions.
2. Consists of:
 - a. Senate,—Two Senators from each State; elected for six years by the State Legislatures.
 - b. House of Representatives,—One representative for every 154,000 people; elected for two years by the people.
3. Chief Powers:
 - a. To make laws.
 - b. To coin money.
 - c. To lay and collect taxes.
 - d. To declare war.
 - e. To provide for and maintain an army and a navy.
 - f. To fix the standards of weights and measures.
 - g. To grant patents and copyrights.

II. *Executive Department.*

1. Chief officer,—President, elected by electors chosen by the people, each State being allowed as many electors as it has Congressmen.
2. President's Cabinet.
3. Chief Duties of President:
 - a. To sign or veto bills.
 - b. To send an annual message to Congress.
 - c. To make treaties, with consent of the Senate.

III. *Judicial Department.*

1. U. S. Supreme Court, consisting of the Chief Justice and eight Associate Justices, appointed by the President, with consent of the Senate, for life or during good behavior.

B EIGHTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

IX. The Struggle for Commercial Independence (227-290, reading only 263-290, omitting 232, 233, 239, 240 and 244-249).

X. The Nation Grows toward the West (244-249, 273-324, reading only 301-324, omitting 278 and 280-290).

Civics.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

Jefferson declines a third term on principle.

The trickery of Napoleon.

The nation refuses to be coerced into paying tribute to the French Directory.

In connection with the discussion of maritime and commercial rights involved in the struggle for commercial independence, speak of international law, the law of nations, its function and development. (See Dole, *The American Citizen*, Chapters XLII, XLIII.)

A NINTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the large topics:

XI. The Long Struggle with Slavery (23, 93, 94, 168, 177, 195, 208, 307-463, reading only 403-418, omitting 312-327, 329-332, 337-347, 352-355, 358-360, 362).

(Children merely read the material on the campaigns of the Civil War, the teacher summarizing at the proper points.)

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the

topics cover from p. 294 to p. 418. The numbers in parenthesis refer to the sections in the State History.

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

Clay, the great compromiser, meets both sides half way.

Jackson takes a firm stand on nullification.

John Brown's raid into Virginia.

Under the question of the secession of the Southern States discuss the relation of States to the central government. Treat the function of State government. (See Dole—*The American Citizen*, Chaps. XI, XII.)

B NINTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

XII. The Legacy of the Civil War (464-518, reading only 464-484, 494, 495, omitting 485-493, 502-516).

XIII. Our Development since the Civil War (488-493, 503-516, 519-561).

XIV. Our Recent Foreign Relations (562-576).

XV. Our Affairs at Home (577-582).

XVI. The History of California (1-18).

Under XV teach any important current events occurring since the publication of the text. Review the pertinent facts of general American History as the History of California is studied.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from p. 419 to the end of the book. The numbers in parenthesis refer to the sections in the State History.

CIVICS.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed

or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

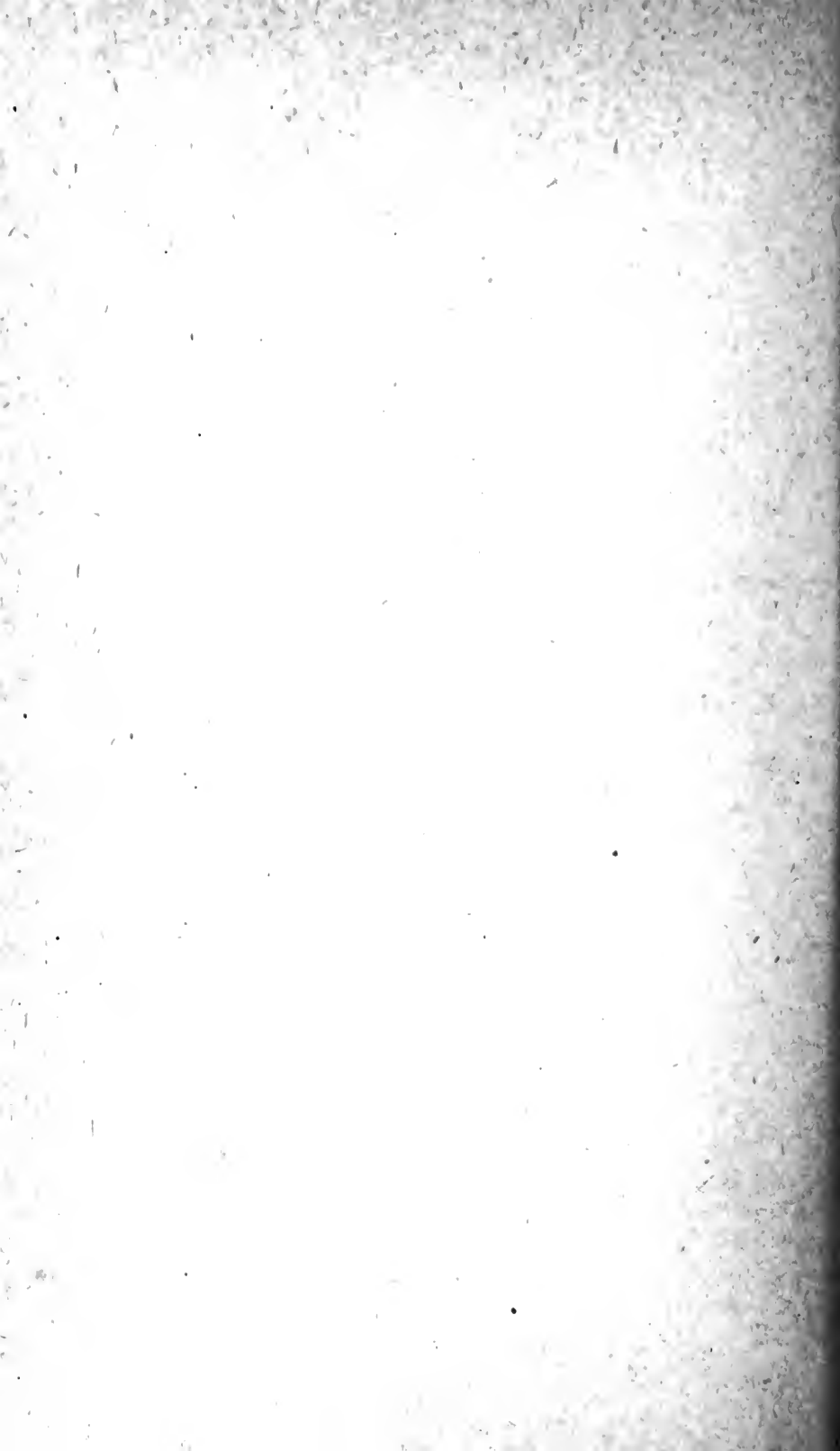
The horrible cost of war.

The partisan fight of President and Congress over Reconstruction.

Our humane war for suffering Cuba.

In connection with our industrial and economic development discuss some of the simplest economic principles that have become important in our recent history, such as the division of labor, the law of supply and demand, etc. (See Dole—*The American Citizen*, Chap. XXVIII.)

DAY HIGH SCHOOLS.



Commercial High School.

The two-year course of study of the Commercial High School aims to give the grammar school graduate a practical knowledge of such subjects as will qualify him to fill his place in the business world.

For this reason, he is especially drilled in the principles of shorthand writing until he acquires the ability to take down dictation with speed; in typewriting he is taught to transcribe his shorthand notes with accuracy and rapidity, and is given practice in business letters and commercial and law forms, manifolding, mimeographing, letter-press copying, filing and indexing. The use and mechanism of the working parts of the machine, cleaning, oiling, and removing and replacing ribbons is taught. In the bookkeeping, the theoretical work is taken first and leads to the practical, until the pupil is able to take any position in an accountant's office. Work in practical business arithmetic is directly correlated with the work in bookkeeping, and courses in Commercial Geography and Commercial Law aim to give the pupil a broad knowledge of our commercial industries—to point out the best places to buy and sell goods, and to teach the inexperienced boy and girl the rules of business. A thorough drill is given in Penmanship, starting with exercises for correct position, then leading to the structure and elements of letters and gradually to words and sentences. Owing to the increase in our commercial relations with Spanish-speaking countries, a course in Spanish is given, and may be taken by all pupils who so desire. An intensive study of the History and Government of the United States is made, and a course in English is planned for the two-fold purpose of instilling culture and giving a practical knowledge of the language.

"Can I get a position?" is a question that is often asked. Any business man will tell you that the opportunities are unlimited. The demand for reliable well trained office men and women is and always has been far in excess of the supply. Not 50 per cent of the applications from business houses can be filled. If you would expect reasonable advancement both as to rank and compensation, do not seek a position until you are well fitted for it. *Half trained is untrained.* Anybody can *get* a position, but to *hold* it and to advance in it is altogether a different matter. To enable you to do this is the province of the Commercial High School.

ENGLISH.

The aim of the work in English Department is to teach the pupil to use the English language in the best possible manner in speaking and writing. To this end frequent drill in oral and written composition is given, special attention being directed toward the writing of hundreds of letters of a practical business nature. Business forms of all kinds are studied and correlated with the work in Shorthand, Typewriting and Bookkeeping.

Much attention is given, especially in the first year, to a thorough review of English Grammar, Spelling, Defining and Sentence-making, that the pupil may be enabled to use ordinary words correctly and improve his oral and written expression.

The value of gaining power by reading and analyzing good literature is not lost sight of, and an attempt is made to instill an appreciation of the best, by a careful systematic study each term (in connection with work in rhetoric) of several of the world's greatest masterpieces. An effort is always made to make the pupil critical of his own expression, as well as that of his classmates, to broaden him morally as well as intellectually, and to make him capable of intelligent, independent thought.

FIRST YEAR.

JUNIOR "A".—(a) Rhetoric, Composition—Commercial Correspondence and a review of Grammar.

(b) *Ivanhoe*.

JUNIOR "B".—(a) Rhetoric and Composition—Commercial Correspondence.

(b) *Lady of the Lake*.

(c) *Alhambra*.

SECOND YEAR.

MIDDLE "A".—(a) Rhetoric and Composition—Commercial Correspondence.

(b) *Poetry of the People*.

(c) *Last of the Mohicans*.

MIDDLE "B".—(a) Rhetoric and Composition—Commercial Correspondence.

(b) *Merchant of Venice*.

(c) *Essays—Muir or Lamb's "Elia."*

FIRST YEAR.

JUNIOR "A".—(a) Business Methods, Rapid Addition and Multiplication, Bill Figuring, Percentage—Simple Interest, Bank Discount, Trade Discount, Profit and Loss.

JUNIOR "B".—(a) Rapid Addition and Multiplication, Bill Figuring, Discount, Partial Payments, Percentage Reviewed, Taxes.

SECOND YEAR.

SENIOR "A".—(a) Commission, Insurance, Partnership, Proportion by Analysis, Duties, Daily Practice in Business calculation.

SENIOR "B".—(a) Accounts, Review of Percentage and Rapid Calculation, Stocks and Exchange, Savings Banks, Equation of Methods.

BOOKKEEPING.

The aim of this department is to fit the pupils to fill positions of trust and responsibility as Accountants.

The course is two years of two terms each, commencing with elementary Double Entry Bookkeeping and gradually expanding so as to include Commission, Corporation, Banking, and Single Entry.

The work is made interesting to the student, inasmuch as he is taught to record transactions from vouchers such as are used in actual business, and is not confined exclusively to the text-book.

Neatness and accuracy are always insisted upon.

COMMERCIAL HIGH SCHOOL.

COURSE A.

SCHEDULE OF STUDIES FOR THE FIRST YEAR COURSE.

LOW JUNIOR	Wk. REC.	HIGH JUNIOR.	Wk. REC.
English and Correspondence.....	4	English and Correspondence.....	4
Business Arithmetic.....	4	Business and Arithmetic.....	4
Bookkeeping.....	5	Bookkeeping.....	5
Shorthand.....	5	Shorthand.....	5
Typewriting.....	5	Typewriting.....	5
Commercial Geography.....	3	United States History.....	4
Spanish (elective).....	4	Spanish (elective).....	
Penmanship.....	3	Penmanship.....	

SCHEDULE OF STUDIES FOR THE SECOND YEAR COURSE.

LOW SENIOR.	Wk. REC.	HIGH SENIOR.	Wk. REC.
English and Correspondence.....	4	Composition and Literature.....	4
Business Arithmetic.....	4	Business Arithmetic.....	4
Bookkeeping.....	5	Bookkeeping.....	5
Shorthand.....	5	Shorthand.....	5
Typewriting.....	5	Typewriting.....	5
Civil Government.....	4	Commercial Law.....	4
Spanish (elective).....	4	Spanish (elective).....	4
Penmanship.....	3	Penmanship.....	3

Pupils who complete the full two years' course will be awarded a diploma.

COMMERCIAL HIGH SCHOOL.

COURSE B.

PREPARATORY COURSE FOR ENTRANCE TO COLLEGE OF
COMMERCE OF THE UNIVERSITY OF CALIFORNIA.

FIRST YEAR:

English A, 1	5 Periods Weekly.
Algebra, 3	4
History, 10	4
Latin	4
Bookkeeping	4

SECOND YEAR:

English A, 1	5 Periods Weekly.
Geometry	5
History, 13a	4
Latin	4
Bookkeeping	3

THIRD YEAR:

English, 14a	4 Periods Weekly.
Mathematics, 2, 4a	4
Latin	4
English History 13b, or Chemistry, 12b	4
Shorthand and Typewriting	5

FOURTH YEAR:

Physics	5 Periods Weekly.
U. S. History and Civics	5
Latin	5
Political Economy, History of Commerce, Stenography and Typewriting	6

Girls' High School.

The Girls' High School is a liberal culture school, the aim of which is to prepare its pupils for the ethical, social, intellectual and domestic requirements of life. While preparing for the culture courses of the University, and also for the State Normal School, its *main* purpose is to give a generous education to that large majority of girls whose formal training goes no further than the High School.

There are no fixed courses of study from which an option must be made; instead of this, certain subjects are required of all pupils, such as three years of English, two of a foreign language, two of Mathematics, two of History, two of Science, and one of Drawing. The other subjects constituting the rest of the pupil's work are absolutely elective; so that, in any event, a well-defined and pedagogically sound course results.

A school unit is the equivalent of five recitations in a subject per week for a term or half-year. Thirty-two units are necessary for graduation; of these twenty-three are required and nine are elective.

The thirty-two units of work can be accomplished in four years by carrying four one-unit subjects. Pupils whose health condition will not permit them to carry four units will be permitted to take fewer units and will require a correspondingly longer time in which to finish the necessary thirty-two units.

Of the many possible courses obtainable from the accompanying Program of Subjects, four are outlined, not as compulsory, but as containing the entrance requirements of the culture courses of the University of California, contained in Groups Ia, Ib, Ic, Id. These four courses also prepare for Stanford University, the State Normal Schools and the principal women's colleges in the East.

The "General Course" is open to all pupils; from it may be made curricula for individual pupils, which, as far as languages are concerned, would give the following possibilities: Four years of Latin, three years of a Modern Language, two years of Latin and two years of a Modern Language, two years of one Modern Language and two years of the other Modern Language.

All election of subjects is subject to the approval of the principal, and all elected subjects must be continued for the full year. Pupils will, when it is deemed advisable, be permitted to elect an

elective subject with a class below their own. All pupils are required to take Physical Culture twice a week for a year.

It is expected that in the near future there will be introduced into the Program of Subjects a course in Domestic Science, including the Chemistry of Cooking, Cleaning, Dyeing, etc., a course in the History of Art, and a course in Hygiene, to be given by a competent woman physician.

GIRLS' HIGH SCHOOL.—PROGRAM OF SUBJECTS.

GENERAL COURSE.		COURSES PREPARATORY TO THE UNIVERSITY OF CALIFORNIA.			
YEAR	Weekly Periods.	GROUP (1a)	GROUP (1b)	GROUP (1c)	GROUP (1d)
I	English	English	English	English	English
	Ancient History	Ancient History	Ancient History	Ancient History	Ancient History
	Drawing	Drawing	Drawing	Drawing	Drawing
	Latin	Latin	Latin	Latin	Latin
	French	1 { Physiography	1 { Botany	1 { Physiography	1 { Botany
II	German	1 { Botany			
	Physiography				
	Botany				
	English	English	English	English	English
	Algebra	Algebra	Algebra	Algebra	Algebra
III	Latin	Latin	Latin	Latin	Latin
	French	Greek	1 { Med. and Mod. History	1 { French	1 { Med. and Mod. History
	German			1 { German	
	Med. and Mod. History				
	Zoology				
IV	Greek				
	Drawing				
	English	English	English	English	English
	Plane Geometry	Geometry	Geometry	Geometry	Geometry
	Latin	Latin	Latin	Latin	Latin
I	French	Greek	1 { English History	1 { French	1 { French
	German		1 { Chemistry	1 { German	1 { German
	English History			1 { English History	1 { English History
	Chemistry			1 { Chemistry	1 { Chemistry
	Drawing				
ELECTIVES.					
I	Physics	Physics	Physics	Physics	Physics
	U. S. History and Civics	History and Civics	History and Civics	History and Civics	History and Civics
	English	English	English	1 { French	1 { French
	Latin	Latin	Latin	1 { German	1 { German
	Greek	Greek		1 { English	Algebra and Sol. Geom.
II	French				
	German				
	Algebra and Sol. Geom.				
	Hygiene and Domestic Science				
	Physiology				

The figures to the left of the subject-names indicate the number of subjects to be chosen; the figures to the right of the subject-names indicate the number of recitations per week. Four subjects amounting to twenty recitations per week are required of each pupil, except in the first year, when twenty-two recitations are required on account of the drawing.

Lowell High School.



This school occupies the field of secondary education commonly indicated by the term "liberal culture." As contrasted with polytechnic, manual training, or purely English institutions, it may properly be termed a "Latin High School." A special feature of this Course of Study is the adoption of the principle of continuous work throughout four years in all the great fields of secondary education—English, Mathematics, Science, History, and Foreign Language, ancient or modern. The idea that a pupil must have an exercise *every day* in all studies which he is pursuing at a given time is abandoned. The pupil is enabled to carry on five or six studies during a term by varying the number of recitations in the particular studies from 2 to 5 per week, 20 recitation-periods a week being considered the standard. One-third or more of the school session is reserved for study.

Much attention has been given to the selection of studies laid down in this Course of Study, and to the adjustment of their time allotment to their educational value for the youth of the high-school age. After the first year, a constantly increasing freedom of election is permitted. In this an adjustment of individual capabilities is accomplished, and a variety of courses is secured through which pupils will find the necessary preparation for any of the departments of the California Universities, and with slight individual modifications for Eastern Universities also. The time-allotment (recitation periods per week) for various lines of study pursued within the school is shown by the following table:

LOWELL HIGH SCHOOL.

COURSES OF STUDY.

FIRST YEAR.	PERIODS	SECOND YEAR.	PERIODS
Mathematics.....	2	Mathematics.....	4
English.....	4	English.....	3
Latin.....	4	Latin.....	5
Science (Physical Geography).....		Science (Biology).....	4
History (Ancient).....	4	History (English).....	3
Drawing.....	4	Composition.....	1
		ELECTIVE, with 2nd Term Biology	
		<i>b</i> Greek.....	4

LATIN SCIENTIFIC COURSE.
(One Foreign Language or Chemistry.)

CLASSICAL COURSE.
(Two Foreign Languages.)

THIRD YEAR.	PERIODS	THIRD YEAR.	PERIODS
Mathematics.....	5	Mathematics.....	5
English.....	3	English.....	3
Physics.....	5	Physics.....	2
ELECTIVES (select any two)		History (Roman and European)	3
Latin.....	4	ELECTIVES (select any two)	
History (Roman and European) ..	3	<i>b</i> Latin.....	4
<i>c</i> Chemistry.....	4	<i>b</i> Greek.....	4
<i>e</i> French.....	4	<i>e</i> French.....	4
<i>e</i> German.....	4	<i>e</i> German.....	4

All Subjects Elective. Select any Combination Covering 20 Periods.

FOURTH YEAR.	PERIODS	FOURTH YEAR.	PERIODS
<i>b</i> Mathematics { I. Sol. Geom.....	4	Nineteenth Century Europe.....	1
II. Trigonom.....	4	<i>b</i> Greek.....	5
English.....	5 or 3	<i>e</i> French { Advanced.....	4
<i>b</i> Latin.....	4	{ Elementary.....	4
<i>a</i> Physics.....	3 or 4	<i>e</i> German { Advanced.....	4
<i>a</i> History { I. United States.....	4	{ Elementary.....	4
II. Civil Government.....	4	<i>d</i> Drawing (Mechanical) ..	4
		<i>c</i> Chemistry.....	4

ADMISSION TO UNIVERSITY OF CALIFORNIA.

a Required for all colleges. *b* For College of Letters. *c* For Colleges of Agriculture, Chemistry, Civil Engineering, Mechanics and Mining. *d* For Colleges of Chemistry, Civil Engineering, Mechanics and Mining. *e* Two years work in either French or German required for Colleges of Chemistry, Civil Engineering, Mechanics and Mining.

N. B.—For Colleges of Natural Sciences, Social Sciences and Commerce, take either Third and Fourth Year Latin; or Chemistry; Fourth Year Mathematics and two years of either French or German.

Leland Stanford Jr., University will admit any one who is qualified for the University of California.

Mission High School.



The courses here outlined have been arranged to increase the number of elective studies without increasing the number of lessons to be prepared weekly. It will also be noticed that the right of election increases as the work becomes more difficult.

In the first year, all the subjects are common to both the classical and scientific courses with the exception of Latin in the former and Physical Geography (Physiography) in the latter.

In the second year, Greek and Elementary Science are taken in the classical course and Botany in the scientific. History (Medieval and Modern) is made elective with Greek.

Students who desire to stop Latin at the end of the second year will have an opportunity to take French or German, or (possibly) Spanish, during the third and fourth years.

These courses prepare for the colleges of the University, as shown by the accompanying table:

MISSION HIGH SCHOOL—COURSES OF STUDY.

FIRST YEAR.

CLASSICAL COURSE.		TIFIC COURSE.	
English A, 1	5	English A, 1	5
Mathematics 3.....	3	Mathematics 3.....	3
History 10.....	5	History 10	5
Drawing 16.....	4	Drawing 16	4
Latin 6.....	4	Ph. Geography 12e	4
Prepared Lessons	17	Prepared Lesson4	17

SECOND YEAR.

CLASSICAL COURSE.		SCIENTIFIC COURSE.	
Bookkeeping, Stenography, Typing (Elective)	5	Bookkeeping, Stenography, Typing (Elective).....	5
English A, 1	5	English A, 1	5
Mathemats 3, 2	5	Mathematics 3, 2	5
Latin 6.....	5	Botany 12c.....	5
Greek 8 or History 13a	4	History 13a	4
Drawing 16.....	2	Drawing 16.....	
Elem. Science	2	Prepared Lessons	19
Prepared Lessons	19		

THIRD YEAR.

CLASSICAL COURSE.		SCIENTIFIC COURSE.	
English 14a	4	English 14a	4
Mathematics 2, 4a	4	Mathematics 2, 4a.....	4
ELECT THREE OF THE FOLLOWING:		Chemistry, 12b.....	4
^a Latin 7.....	4	French 15a, 2, or }	5
Greek 8.....	4	German 15b, 2... }	
Chemistry, 12b	4	History 13b or }	4
History, 13b.....	4	Drawing 17.... }	5
^a French 15a, 2	5	Prepared Lessons	17 or 21
^a German 15b, 2	5		
Prepared Lessons	20 or 21		

^aLatin, French or German if taken in the third year, must be taken in the fourth year also.

FOURTH YEAR.

CLASSICAL COURSE.		SCIENTIFIC COURSE.	
History and Government 5.....	5	History and Government	5
Physics II.....	5	Physics II.....	5
ELECT TWO OF THE FOLLOWING:		French 15a, 2, or }	5
Latin 7.....	4	German 15b, 2... }	
Greek 9	5	Mathematics 4b and 12a, 2, or }	5
English 14b	5	English 14b	
French 15a, 2	5	Prepared Lessons	20
German 15b, 2.....	5		
Prepared Lessons	19 or 20		

STUDY GROUPS FOR ENTRANCE TO THE UNIVERSITY OF CALIFORNIA.

Mission High

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FOR THE COLLEGE OF LETTERS (also S.S., N. S., Com.)		FOR THE COLLEGES OF SOCIAL SCIENCE, NATURAL SCIENCE, COMMERCE		FOR THE COLLEGE OF AGRICUL- TURE.		FOR THE COLLEGE OF MECHAN- ICS, MINING, CIVIL, ENG., CHEMISTRY		FOR THE COLLEGE OF MEDICINE	
Periods per wk.	Periods	Periods	Periods	Periods	Periods	Periods	Periods	Periods	Periods
English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Latin 6..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Latin 6..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Latin 6..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Latin 6..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Latin 6 or Physi- og. 12c..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Latin 6..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Physiog. 12c, or } Latin 6..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Physiog. 12c, or } Latin 6..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Physiog. 12c, or } Latin 6..... 4	English A, 1..... 5 Algebra 3..... 3 History 10..... 5 Drawing 16..... 4 Physiog. 12c, or } Latin 6..... 4
English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2	English A, 1..... 5 Mathematics 2, 3..... 5 Latin 6..... 5 Greek 8..... 4 History 13a..... 4 Drawing 16..... 2 Element. Science 2
English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }	English 14a..... 4 Mathematics 2, 4a..... 4 Latin 7..... 4 Greek 8..... 4 Chemistry 12b..... 4 History 13b..... 4 French 15a2..... 4 German 15b2..... 4 Elect. One } French } German }
Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5	Hist. and Gov. 5..... 5 Physics 11..... 5 Latin 7..... 5 English 14b..... 5 Greek 9..... 5 French 15a2..... 5 German 15b2..... 5

Latin, French or German if taken in the third year must be taken in fourth year also.

Polytechnic High School.

The school offers two courses, one four years, the other three years in length. They include for the boys, work in wood and metal; for the girls, work in domestic science, clay modeling, wood carving, pen and ink sketching and designing.

All first-year pupils take the same course as prescribed below. At the beginning of the second year, pupils are given the option of taking the College Preparatory (four years) or the Mechanic Arts (three years) Course.

The College Preparatory Course prepares for the Engineering, Chemistry, Natural Science and Medical Colleges of the University of California, for Stanford University and advanced Technical Schools.

The Mechanic Arts Course aims to fit boys and girls to enter at once industrial pursuits upon graduation. In this course more time is devoted to Shop and Laboratory work (boys), Domestic Science and Industrial Arts (girls), and less to Modern Languages, than in the College Preparatory.

POLYTECHNIC HIGH SCHOOL.

FIRST YEAR.

	No. of Periods per Week.		No. of Periods per Week.
English Language and Literature	4	Drawing, Free Hand and Instru- mental	4
Algebra	4	Shop Work (boys)	10
Physics	2	Domestic Science (girls)	10
German or French	4		

SECOND YEAR.

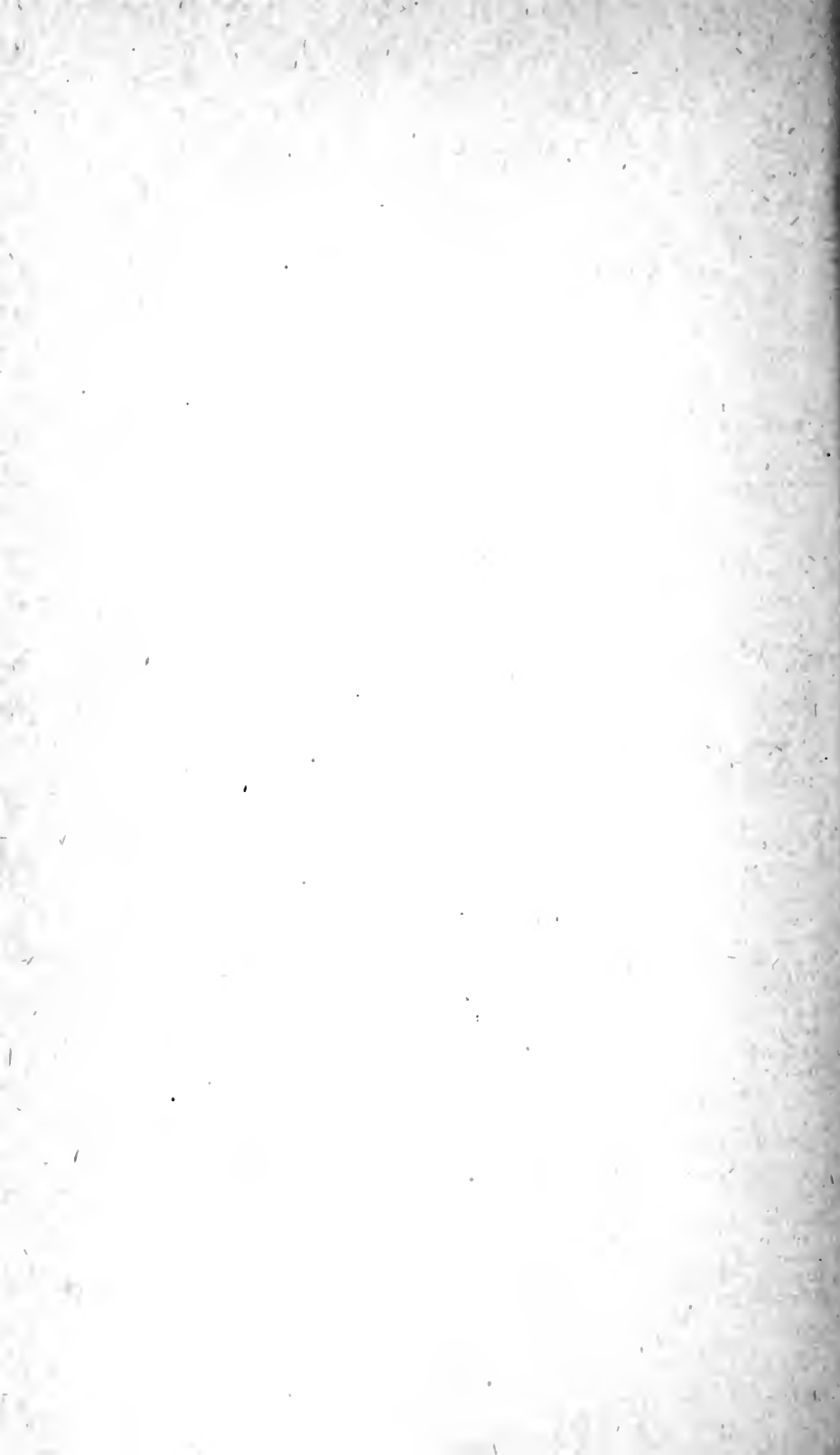
COLLEGE PREPARATORY.	No. of Periods per Week.	MECHANIC ARTS.	No. of Periods per Week.
English Language and Literature	4	English Language and Literature	4
Plane Geometry	4	Plane Geometry	4
Physics	2	Physics (boys)	5
German or French	4	German, French or Latin (girls)	5
Latin	4	Drawing, Free Hand and Const.	6
Drawing, Free Hand and Const.	4	Shop Work (boys) or	10
Shop Work (boys) or	6	Domestic Science (girls)	10
Domestic Science (girls)	6		

THIRD YEAR.

	No. of Periods per Week.		No. of Periods per Week.
History, U. S. and Civ. Gov'tment	4	U. S. History and Civil Gov'tment	5
Solid Geom. and Adv. Algebra	5	Solid Geometry, Trigonometry and Surveying (boys)	5
Trigonometry		French, German or Latin (girls)	5
Chemistry	5	Chemistry	5
Latin	4	Advanced Physics (boys)	5
Drawing, Free Hand and Const.	4	Shop Work or Industrial Art	10
Shop Work (boys)	4		
Industrial Art (girls)	4		

FOURTH YEAR.

	No. of Periods per Week.		No. of Periods per Week.
English Literature and Compo- sition	4	Latin	4
Advanced Algebra	5	Drawing, Free Hand and Const.	4
Projective Geometry	4	Shop (boys)	4
Advanced Physics	4	Industrial Art (girls)	4



EVENING HIGH SCHOOLS.

Commercial Evening High School.

The field of commercial study is so broad, and the time of the evening school so limited, that the course of instruction must of necessity be devoted to those studies of an elementary or technical nature, which are deemed most appropriate for commercial life.

The course of instruction covers a period of two years.

Applicants for admission must be graduates of Grammar Schools. Graduates of High Schools, Colleges and Universities may be excused from instruction in Composition and Rhetoric and Commercial Arithmetic, and may take the final examinations after attending the school one full term.

The subjects selected for instruction are Bookkeeping, Stenography, Composition and Rhetoric, French, Spanish, Typewriting, Commercial Arithmetic, Penmanship, Geography of Commerce, Correspondence and Commercial Law.

The sessions are from 7:15 to 9:15 P. M., five evenings each week. The week is divided into fifteen periods of forty minutes each. Each student must select fifteen periods of class work each week.

The Bookkeeping Department requires seven periods in its major subject—Bookkeeping.

The Stenographic Department requires seven periods in its major subject—Stenography.

The Language Department requires seven periods in its major subjects—French or Spanish.

Humboldt Evening High School.

The attention of the graduates of the grammar grades is respectfully called to the opportunities offered by the Humboldt Evening High School to those graduates who do not choose to attend a Day High School.

THREE DEPARTMENTS.

The work of the Evening High School extends over three years, and three courses are open to the student: Literary, Scientific and Language, each leading to a High School Diploma. Instruction is given in Mathematics, History, English Literature, Latin, German, Physics and Chemistry. A well equipped laboratory affords ample opportunity for thorough experimental work.

Besides those taking the complete course, a number of students attend in order to make up requirements for admission to the various professional colleges. Several graduates of the school have entered the University of California, and all have made excellent records in their collegiate studies.

The student entering the Drawing Department may enroll himself for instruction in any one of the following classes: Naval Architecture, Architecture, Civil Engineering, Marine Engineering, Electrical Engineering and Mechanical Engineering.

Each of these classes is in charge of an experienced specialist in his own particular branch. The apprentice or journeyman, therefore, has here an unequalled opportunity to obtain thorough instruction in the particular kind of mechanical drawing which he needs for his trade, supplemented by good courses in Arithmetic, Algebra, Geometry, Mechanics, Electricity and Chemistry. A certificate of record is given for the work accomplished by the student.

The full courses are arranged for three years, two hours per evening, from 7:15 to 9:15, on the satisfactory completion of which the student will receive the Evening High School Diploma.

Graduates of the Grammar Grades, day or evening, are admitted to the Evening High School courses without examination.

The courses offered in the Evening High School are:—

I. SCIENTIFIC. II. LITERARY. III. LANGUAGE.

Subjects more or less extended are given in English, History, Mathematics, and Science, according to course. In the Language Course a modern language is added to the Literary Course.

(For Drawing Courses see page —.)

FIRST YEAR.

SCIENTIFIC JUNIOR.

1. *Arithmetic*.—Parts not taken up in Grammar Grades. The Metric System; Mensuration; rapid calculation.
2. *Algebra*.—Through equations of first degree.
3. *Geometry*.—Selected Propositions. Mensuration.
4. *Physics*.—Short course, comprehending the main divisions of Physics, with experiments of laboratory work.
5. *English*.—Grammar and Composition; Rhetoric; Study of standard selections from Literature; Debates.
6. *History*.—General History, Ancient, Medieval, and Modern.

LITERARY JUNIOR.

Omits (4) and (6) and adds (7) or (8).

7. *Latin*.—Beginners' Book, Selections from Cæsar.
8. *German*.—Beginners' German Book, Spanhoofd.

SECOND YEAR.

SCIENTIFIC MIDDLE.

1. *Algebra*.—Review topics of first year; thorough drill in application of principles to problems: Quadratics, Series.
2. *Geometry*.—Plane Geometry, application of Algebra to Geometry.
3. *Science*.—First Year's Course Extended; Physical and Mechanical Problems; Experiments and Laboratory Work; Short course in elements of Chemistry.
4. *English*.—Composition and Rhetoric; Standard Authors; Essays; Debates.
5. *History*.—American History, with special reference to the development of our National Institutions.
6. *Civil Government*.—Municipal, State, and National affairs; duties of officials and citizens.

Omits (5) and (6) and adds (7) or (8).

LITERARY MIDDLE.

7. *Latin*.—Grammar, Composition. Cæsar, Cicero.
8. *German*.—Complete Spanhoofd, Glück. Auf, Höher als die Kirche.

THIRD YEAR.

SCIENTIFIC SENIOR.

1. *Mathematics*.—Higher Algebra, Solid Geometry, Trigonometry; Application to Mechanics, Surveying, and Navigation; Drafting of Surveyors' and Engineers' Field Notes.

2. *English*.—English Classics, Essays, Debates, Criticism.
3. *Science*.—Physics, Chemistry, Assaying, Lectures on various Scientific Subjects.
4. *History*.—Channing's United States.

LITERARY SENIOR.

Omit parts of (1) and (3) with permission of principal and adds (4) and (5) or (6).

5. *Latin*.—Composition, Cicero, Virgil.
6. *German*.—Composition, Letters, Wilhelm Tell, and other classics.

SPECIAL INSTRUCTION.

Special students may be admitted to one or more of the High School studies when the classes are not filled by the regular pupils.

Students conditioned in the Affiliated Colleges may attend the Evening High School to work off their conditions.

Adults preparing for the University may select the subjects requiring their special attention.

The Evening High School Glee Club, under the direction of a class teacher, meets for practice twice a week, after school hours.

FOREIGN CLASSES.

The pupils of the foreign classes are graded according to their knowledge of English, and shall be advanced to the preparatory classes of the High School as soon as their requirements permit.

ADMISSION TO EVENING HIGH SCHOOL.

Graduates of the Grammar Grades, day or evening, are admitted to the regular courses of the Evening High School without examination.

Text books selected from the approved list for High Schools.

HUMBOLDT EVENING HIGH SCHOOL—DRAWING.

The aim of the Drawing Department of the Humboldt Evening High School is to assist young men who are engaged in any of the industrial pursuits or mechanical trades to become first-class workmen and master mechanics. In consequence, the work of the school is designed both to be in connection with and to further the student's daily work. Three years are required as a minimum to complete satisfactorily the course as arranged; and no student will be entered for a less period of time who has not had the equivalent of some part of the course elsewhere.

Requirements for admission to the Drawing Department provide that the applicant be a graduate of the Grammar School, or that he shall have had an equivalent preparation; and, in addition, it is desirable that he be employed in one of the mechanical trades which have relation to the branches taught.

The courses of instruction are grouped very naturally according to the three larger divisions of industrial occupations prevailing in and about San Francisco: (1) Courses relating to Mechanical Engineering, (2) Courses relating to Architecture, and (3) Courses relating to Naval Architecture. All the instruction falls under these three heads. Each subject, however, is sub-divided into its special branches, in order that no aspect or part of the main subject be without consideration in the work of the department. Thus, under courses relating to Mechanical Engineering is included instruction in branches such as Electrical Engineering, Mining Work, Marine Engineering, etc.

Supplementary to the work above described, instruction is offered in Arithmetic, Algebra, Geometry, Trigonometry, and Theoretical Electricity and Mechanics. In addition, lectures are given by the class teachers every Friday evening throughout the school year on subjects of common interest to the students. At stated intervals lectures are also given by the prominent technical men.

The students, in order that they may receive the maximum of beneficial instruction, are assigned to a class the work of which has to do with their particular specialty.

These specialties, as given at the school, are grouped, with the number of classes in each, as follows:

Electrical Engineering.....	one class.
Marine Engineering.....	three classes.
Special and Automatic Machinery.....	two classes.
Gas Engines and Locomotive Work.....	one class.
Mining and Stationary Machinery.....	one class.
Architecture	three classes.
Naval Architecture.....	two classes.

The courses are detailed as follows:

COURSE FOR MECHANICAL ENGINEERING.

Drawing.—1. Graphic Geometric Problems, Projections, Sections and Intersections, Developments of Surfaces. 2. Application of the Preliminary Drawing (Division No. 1) to Practical Work. 3. Sketching Machine Details and Elementary Detailing. 4. Detailing from General Arrangements of Machinery. 5. Designing, including Knowledge of Calculations involved for same.

Engineering Problems.—1. Theoretical. 2. Shop. 3. Operating.

COURSE FOR ELECTRICAL ENGINEERING.

Drawing.—1. Graphic Geometric Problems, Projections, Sections and Intersections, Developments of Surfaces. 2. Application of the Preliminary Drawing (Division No. 1) to Practical Work. 3. Sketching Electrical Engineering Details and Elementary Detailing. 4. Detailing from General Arrangements of Electrical Machinery. 5. Designing Electrical Machinery, including Knowledge of Calculations involved for same.

Electrical Problems.—1. Theoretical. 2. Shop. 3. Field. 4. Operating.

COURSE FOR NAVAL ARCHITECTURE.

Drawing.—1. Graphic Geometric Problems, Sections and Intersections, Developments of Surfaces. 2. Application of the Preliminary Drawing (Division No. 1) to Practical Work. 3. Sketching Ship Details and Elementary Detailing. 4. Laying Down Lines of the Ship's Hull and Constructing Wooden Models of same. 5. Detailing from General Drawings of Ships; Designing Ships, including Knowledge of Calculations involved

Ship Construction Problems.—1. Theoretical. 2. Shipyard. 3. Sea-going.

COURSE FOR ARCHITECTURAL STUDENTS.

Drawing.—1. Graphic Geometric Problems, Projections, Sections and Intersections, Developments. 2. Conventional Forms and Structural Details. 3. The Five Orders. 4. Plans and Elevations: (a) Frame, (b) Masonry, (c) Steel. 5. Detailing: (a) Exterior, (b) Interior. 6. Graphic Analysis of Roof Trusses. 7. Trade Work: (a) Carpentry, (b) Mill Work, (c) Joinery and Stair Work, (d) Furniture and Cabinet Work, (e) Brickwork, (f) Stonework, (g) Concrete Work, (h) Plumbing, Heating and Ventilating, (i) Electric Wiring, (j) Architectural Iron Work, (k) Sheet Metal Work, (l) Art Glass Work. 8. Shades and Shadows, Perspective. 9. Decoration, Designing, Rendering. 10. Leveling, Cross Sectioning. 11. Surveying, Plotting. 12. Engineering Construction.

Construction Problems.—1. Practical Questions. 2. Figuring, Bills of Material, etc. 3. Strength of Materials.

Mathematics.—Arithmetic. 1. Review of Addition, Subtraction, Multiplication and Division, Fractions and Decimals. 2. Square and Cube Root. 3. Mensuration. *Algebra.* 4. Addition, Subtraction, Multiplication, Division. 5. Factoring and Fractions. 6. Simultaneous Equations. 7. Quadratics. *Geometry.* 8. Plane Triangles. 9. Quadrilaterals. 10. Proportion. 11. Areas of Polygons. 12. Regular Polygons and Circles. *Trigonometry.* 13. Trigonometric Functions, Logarithms and use of Tables. 14. Solution of right and oblique Triangles. 15. Spherical right Triangles.

Physics.—1. Principles of Mathematics. 2. Heat. 3. Theoretical Electricity.

Graduates of the Academic Department of the Humboldt Evening High School and of other High Schools and Colleges, will receive credit for their Mathematics, but will be required to apply (13), (14) and (15) *Mathematics*, to practical problems.

COURSE B.

FOR ENTRANCE TO THE UNIVERSITY OF CALIFORNIA.

FIRST YEAR.

SCIENTIFIC	REC.	LATIN SCIENTIFIC.	REC.
English A, 1.....	5	English A, 1.....	5
Algebra 3.....	5	Algebra 3.....	5
History 13a.....	5	Latin 6.....	5

SECOND YEAR.

English A, 1.....	5	English A, 1.....	5
Mathematics 2, 3.....	5	Mathematics 2, 3.....	5
German 15b ²	5	Latin 6.....	5
Chemistry 12b (6½-7¼).....	5	Chemistry 12b.....	5

THIRD YEAR.

English A, 1.....	5	English A, 1.....	5
Mathematics 4, 12a.....	5	Mathematics 4, 12a.....	5
German 15b ²	5	Latin 6.....	5
Physics 11 (6½-7¼).....	5	Physics 11.....	5

FOURTH YEAR.

English 14.....	5	English 14.....	5
History 5.....	5	History 5.....	5
German 15b ²⁻³	5	Latin 6, 7.....	5
Drawing 16 (6½-7¼).....	5	Drawing (optional).....	5

FIFTH YEAR.

English 14.....	5	English 14.....	5
Drawing 17.....	5	History 13a, 13b.....	5
German 15b ²⁻³	5	Latin 7.....	5

DRAWING DEPARTMENT.

COURSE B.

LEADING TO THE COLLEGE OF MECHANICS, U. C.

FIRST YEAR.

English A, 1.

Algebra 3.

Drawing.—In connection with mechanical Engineering, Electrical Engineering, Naval Arch., Architecture.

Shop Work.—In reputable machine shops or drafting rooms during the day.

SECOND YEAR.

English A, 1.—Continued.

Mathematics.—Algebra; Geometry; Mensuration.

Theoretical Electricity.

Elementary Science.

Drawing.—In connection with Engineering and Architecture.

Shop Work.—Regular daily employment as apprentice or journeymen.

THIRD YEAR.

English A, 1.—Continued.

Mathematics 4.—Applied.

Science.—Theoretical Electricity; Mechanics; Advanced Work.

Drawing.—As above; Designing.

Shop Work.—As above; Reports from students' foreman.

FOURTH YEAR.

History and Government 5.—History of Science and Invention.

Mathematics.—Adv. Alg.; Trig.; Plane and Spher.

Applied Physics and Chemistry.

Shop Work.—The student must have completed his apprenticeship by end of Fourth year.

See details of subject pages 23 and 24, Course of Study.

APPENDIX.

SOME SUGGESTIONS ON MATERIAL AND METHOD PRIMARY LANGUAGE.

FIRST YEAR.

READING.—Confine the reading of the first half term to print. Use diacritical marks in reading only so far as necessary. Never mark a word if it can be pronounced without marking. Give more real phonics, that is, sounds and ear training. Avoid so-called spelling by sound. Use many action sentences. Put the sentence on the board; let the pupil perform the act indicated, then read in natural tone and expression. Avoid the high-pitched voice in reading. Much attention to phrasing or grouping words.

SPELLING.—Begin spelling the second term.

WRITING.—During the first ten weeks prepare for writing by much drill in movement exercises at board and at seats. Begin writing the second term.

COMPOSITION.—Make all composition oral during the first year, taking material from reading lessons, stories, points of compass, observation of familiar things, spontaneous drawing, etc. In other respects follow printed "Course of Study."

SECOND YEAR.

READING.—Drill on phonics taught in the first year, adding a, a, oo, ou, ow, oi, oy, g (hard and soft sounds), c (hard and soft sounds), ch (hard and soft sounds). Give a short drill with each reading lesson. Much attention to phrasing or grouping of words.

Memorize three selections each term.

COMPOSITION.—Make the work largely oral. Let most of the written work be at the blackboard. At first single sentences, then several sentences pertaining to the same subject. Be sure that the child has a thought, and the language is used to express that thought, not for the purpose of merely "making sentences." In other respects follow printed "Course of Study."

THIRD YEAR.

READING.—Keep up phonic drill of first and second years. Give no new diacritical marks, no new sounds except in words. Much attention to clear utterance of sounds *in words*. Continue grouping and phrasing of words.

Memorize three selections each term.

COMPOSITION.—Continue oral composition. Develop or stimulate thought on a subject, then write several sentences. Gradually lead children to rearrange sentences to make good paragraph. Call attention to structure of paragraph in reading, central thought, subordinate thoughts arranged about it. During second term write two or three paragraphs. Call attention in the reading to constructions and arrangements of sentences to make them fit together in the paragraph. Make the ear the test of good composition. If the ear is incorrect educate it by oral drill and reading of correct form. Mere rules are useless if the expression does not *sound* right to the child.

READING AND LITERATURE.*

INTRODUCTION.

There are two main objects in having Reading in a Course of Study—to give to pupils the ability to read and to awaken an interest in and an appreciation for good literature. To teach pupils to read without showing them what to read and without developing in them a spirit of literary appreciation is to do but a small part of our duty. This love for what is really worth

*Taken largely from the Course of 1900.

reading will not grow up of itself, nor can it be developed by the use of a reader, composed of scrappy selections and really intended for drill on the technical side of reading. The only way to lift children above the low level of the trashy novel and the sensational newspaper is to do it by developing in them, during the early years of school life, a keen appreciation of good literature. This opening up of the fields of literature is not a duty which should be left to the high school or to the last year or two of the grammar school. On the contrary, it should begin as soon as the child begins to read and should continue throughout his school course.

Viewed from a technical standpoint, a child should be taught to read well—to articulate perfectly, to give the proper inflection and emphasis and to make the proper rhetorical pauses. This work will occupy much of the teacher's time during the first three or four years of school, and drill of this kind should be continued to a large extent in the grammar school and in the high school. It is the chief function of the ordinary school reader to furnish the material for this drill on *the mechanics of Reading*.

Drill work, though, should not be all there is to a course in Reading. To keep a child grinding away at drill-work alone will defeat the very object of the drill. Ease in learning to read is largely determined by the quantity of suitable material read, and by the rapidity with which a child's attention is shifted from the mere process of reading to the thought contained in the book, thus rendering the mechanical process an unconscious one. This demands quantity, and this quantity should take the form of easy reading matter which is suited to the advancement of the pupil. In the supplemental reading the child is given practice in the use of his tool. The drill and the rapid reading should go side by side.

In selecting the material for the rapid supplementary reading a few fundamental considerations have been kept in mind:

First—What is wanted is not a scrappy reader, except in the first few years, where the drill work is the most important part, but rather entire selections or stories having a continuous line of thought.

Second—The selections should be good literature—something that will develop a love for knowledge and beauty of expression. The information reader has a large place in this work, for truth, as fiction, may be expressed in beautiful language. The child should be trained to get knowledge as well as pleasure from books. (See Parallel Reading.)

Third—The selections should be interesting in themselves and should appeal to the child in such a way as to make him want to read more of the same kind.

SELECTIONS TO BE READ TO THE PUPILS.

From time to time during each term teachers should read to pupils selections from good literature. Naturally more reading will be done during the first two or three years than during the years following, but a certain small number of selections should be read to the pupils during each year of their Primary and Grammar School Course.

The object of this work is not to give the pupils drill, but to awaken appreciation. To this end the teacher should practice the selection before reading it to the pupils, that she may place before them *an example of good reading*—reading in which the pauses, articulation, inflection and emphasis are as perfect as possible. Before reading the selection the teacher should explain what it is that she is about to read, and interpret the selection sufficiently to prepare the way for the proper appreciation of it when read.

The time when these selections should be read is left entirely to the discretion of the teacher. Some can be read best in connection with other class work. The number of selections to be read each term and the choice of them is left largely to the teacher, but with the proviso that at least one selection should be read each month and that only good literature be chosen.

By way of a suggestion to teachers, the list of such reading in use at San Diego is appended. The third column gives one place where the selection may be found. "W. & F." means Williams & Foster's *Selections for Memorizing*; *Nature in Verse* is by Lovejoy, and "Child Life" means Whittier's *Child Life in Poetry and Prose*.

FIRST AND SECOND GRADES.

Child's Dream of a Star.....	<i>Dickens.</i>	
Who Stole the Bird's Nest?..	<i>L. Maria Child.</i>	W. & F.
Over in the Meadow.....	<i>O. A. Wadsworth.</i>	H. of Oak II.
Mountain and the Squirrel....	<i>Emerson.</i>	Child Life.
Visit from St. Nicholas.....	<i>Moore.</i>	W. & F.
Rover in Church.....		Nature in Verse.
Mrs. Brindle's Cow Slip Feast.		Nature in Verse.

One, Two, Three	<i>Henry C. Bunner.</i>	Riv. Lit. Sr. No. 59.
What Are You Good For?...	<i>Emily Miller.</i>	Child Life.
Lady Moon	<i>Lord Houghton.</i>	Child Life.
Pitter, Patter		Nature in Verse.
All Things Beautiful.....	<i>Mrs. Alexander.</i>	Child Life.
Seeing Things at Night.....	<i>Eugene Field</i>	Poems.
Classic Stories for Children*..	<i>Lida McMurry.</i>	
The Wind Party	<i>Dorothy Brooks.</i>	Stories of Red Children.

*This book contains a good selection of classic stories and should be drawn from freely.

THIRD GRADE.

The Dream Peddler.....	<i>Lucy Blinn.</i>	W. & F.
The Chicken's Mistake.....	<i>Phoebe Cary.</i>	Poems.
They Didn't Think.....	<i>Phoebe Cary.</i>	Poems.
Ax Grinding	<i>Franklin.</i>	Ap. 4th R.
Benjamin Franklin	<i>Unknown.</i>	Banc. 4th R.
Letters of Recommendation...	<i>Unknown.</i>	Old S. S. 2d R.
Daniel Boone	<i>Goodrich.</i>	Ap. 4th R.
Out to Old Aunt Mary's....	<i>Riley.</i>	Afterwhiles.
The Brook	<i>Tennyson.</i>	Child Life.
Do All That You Can.....	<i>Sangster.</i>	W. & F.
The Spider and the Fly.....	<i>Hoxwitt.</i>	Child Life.
What Alice Said to the Kitten.	<i>Carroll.</i>	Ap. 4th R.

FOURTH GRADE.

FALL TERM.

The Prairie on Fire.....	<i>Cooper.</i>	Ap. 4th R.
The Battle of the Ants.....	<i>Thoreau.</i>	Ap. 5th R.
The Careful Observer.....	<i>Colton.</i>	Ap. 4th R.
Casabianca	<i>Mrs. Hemans.</i>	Old S. S. 3d R.
Robert of Lincoln.....	<i>Bryant.</i>	Child Life.
Sing On, Blithe Bird.....	<i>Motherwell.</i>	Child Life.
Over and Over Again.....	<i>Pollard.</i>	W. & F.
Perseverance of a Spider....	<i>Goldsmith.</i>	Ap. 4th R.
The Poet and the Children...	<i>Whittier.</i>	Cyr's 2d R.

FALL TERM.

The Crow's Children.....	<i>Phoebe Cary.</i>	W. & F.
Lilliputian War at Sea.....	<i>Swift.</i>	Ap. 4th R.
Lilliputian Tailors and Cooks.	<i>Swift.</i>	Ap. 4th R.

Gulliver Among the Giants...	<i>Swift.</i>	Ap. 4th R.
Clear the Way.....	<i>Unknown.</i>	W. & F.
The Fish I Didn't Catch.....	<i>Whittier.</i>	Child Life.
The Discontented Pendulum..	<i>Jane Taylor.</i>	Ap. 4th R.
Jack in the Pulpit	<i>Clara Smith</i>	Child Life.
Battle of Blenheim.....	<i>Southey.</i>	Child Life.

FIFTH GRADE.

FALL TERM.

Old Clock on the Stairs.....	<i>Longfellow.</i>	Ap. 4th R.
What Intemperance Does.....	<i>Unknown.</i>	W. & F.
Labor Is Worship.....	<i>Osgood.</i>	W. & F.
A Naughty Little Comet.....	<i>Wilcox.</i>	Nature in Verse.
The Day Is Done.....	<i>Longfellow.</i>	Banc. 4th R.
The Captain's Daughter.....	<i>Fields.</i>	Child Life.
God Bless Our Stars Forever..	<i>B. F. Taylor.</i>	
Rain in the Summer.....	<i>Longfellow.</i>	Poems.
Squeers' Boarding School.....	<i>Dickens.</i>	Banc. 4th R.
A Prairie Dog Village.....	<i>Edw. Nealy.</i>	
The Way to Wealth.....	<i>Franklin.</i>	Ap. 5th R.

SPRING TERM.

Snow Storm on Mt. Shasta...	<i>Muir.</i>	Banc. 4th R.
Fight of Paso del Mar.....	<i>Bayard Taylor.</i>	Ap. 4th R.
Deacon's One-Horse Shay....	<i>Holmes.</i>	Poems.
Charge of the Light Brigade..	<i>Russell.</i>	Ap. 5th R.
Charge of the Light Brigade..	<i>Tennyson.</i>	Ap. 5th R.
In Swanage Bay.....	<i>Muloch.</i>	
Wreck of the Hesperus.....	<i>Longfellow.</i>	Poems.
A Leak in the Dike.....	<i>Phoebe Cary.</i>	Poems.
Mariner's Dream	<i>Dimond.</i>	Ap. 4th R.
Birds in Summer.....	<i>Mary Howitt.</i>	Banc. 4th R.

SIXTH GRADE.

FALL TERM.

The Last Leaf.....	<i>Holmes.</i>	Poems.
Murderer Cannot Keep His Secret	<i>Webster.</i>	Ap. 5th R.
Our Kind of a Man.....	<i>Riley.</i>	Afterwhiles.
Walter von der Vogelweid...	<i>Longfellow.</i>	Poems.

Burial of Moses.....	<i>Mrs. Alexander.</i>	Standard Sel's.
The Stormy Petrel	<i>Barry Cornwall.</i>	
The Battle of Hastings.....	<i>Dickens.</i>	Ap. 5th R.
Man Without a Country.....	<i>E. E. Hale.</i>	
Pegasus in Pound.....	<i>Longfellow.</i>	Poems.
Battle of Blenheim.....	<i>Southey.</i>	Child Life.

SPRING TERM.

Hawthorne	<i>Longfellow.</i>	Poems.
Order for a Picture.....	<i>Alice Cary.</i>	Poems.
Daily Work	<i>Chas. MacKay.</i>	W. & F.
Marco Bozzaris	<i>F. G. Halleck.</i>	Ap. 5th R.
Ike Walton's Prayer.....	<i>Riley.</i>	Afterwhiles.
Death of Little Nell.....	<i>Dickens.</i>	W. & F.
Bell of Atri.....	<i>Longfellow.</i>	Poems.
Bingen on the Rhine.....	<i>Caroline Norton.</i>	Old S. S. 3d R.
Arnold Winkelried	<i>Montgomery.</i>	
The Dying Gladiator.....	<i>Byron.</i>	Poems.

SEVENTH GRADE.

FALL TERM.

My Lost Youth.....	<i>Longfellow.</i>	Poems.
Abou Ben Adhem.....	<i>Leigh Hunt.</i>	W. & F.
To a Skylark.....	<i>Shelley.</i>	Ap. 5th R.
Tempest (from David Copper- field)	<i>Dickens.</i>	Chap. LV.
Battle of Fort Christina (Knickerbocker)	<i>Irving.</i>	Book VI, Chap. 7.
Resignation	<i>Longfellow.</i>	Poems.
Rienzi's Address to the Rom- ans	<i>Miss Mitford.</i>	Ap. 5th R.
To a Mountain Daisy.....	<i>Burns.</i>	Poems.
Dickens in Camp.....	<i>Bret Harte.</i>	
I Remember, I Remember....	<i>Thos. Hood.</i>	Ap. 5th R.

SPRING TERM.

Liberty or Death.....	<i>Patrick Henry.</i>	Ap. 5th R.
Independence Bell	<i>Unknown.</i>	W. & F.
Grandmother's Story of the Battle of Bunker Bill.....	<i>Holmes.</i>	Masterpieces.

Painter of Seville	<i>Wilson.</i>	
Dissertation on Roast Pig.	<i>Chas. Lamb.</i>	Essays of Elia I.
The Storm (Toilers of the Sea)	<i>Victor Hugo.</i>	Chap. III.
Sands of the Desert in an Hour Glass	<i>Longfellow.</i>	Poems.
Declaration of Independence.	<i>Robt. Winthrop.</i>	Normal 5th R.
The Bells	<i>E. A. Poe.</i>	Old S. S. 3d R.
The American War	<i>Wm. Pitt.</i>	Stand. Sel's.
Paul Revere's Ride.	<i>Longfellow.</i>	Poems.

EIGHTH GRADE.

FALL TERM.

The Men to Make a State.	<i>Doane.</i>	W. & F.
Reply to Hayne (Massachu- setts and South Carolina)	<i>Webster.</i>	Old S. S. 3d R.
The Prayer of Agassiz.	<i>Whittier.</i>	Poems.
The Prisoner for Debt.	<i>Whittier.</i>	Poems.
The Raven	<i>E. A. Poe.</i>	Old S. S. 3d R.
Eve Before Waterloo.	<i>Byron.</i>	Ap. 5th R.
Battle of Waterloo.	<i>Victor Hugo.</i>	Ap. 5th R.
The Slave in the Dismal Swamp	<i>Longfellow.</i>	Poems.
Death of the Flowers.	<i>Bryant.</i>	W. & F.

SPRING TERM.

Barbara Frietchie	<i>Whittier.</i>	Poems.
Sheridan's Ride	<i>T. B. Read.</i>	W. & F.
Elegy in a Country Church- yard	<i>Gray.</i>	Ap. 5th R.
The Present Crisis.	<i>Lowell.</i>	Poems.
The Prisoner of Chillon.	<i>Byron.</i>	Poems.
How Old Brown Took Har- per's Ferry	<i>E. C. Stedman.</i>	Poems.
The Deserted Village	<i>Goldsmith.</i>	Ap. 5th R.
On Good Books (In Sesame and Lillies)	<i>Ruskin.</i>	Lecture I.
Old China	<i>Chas. Lamb.</i>	Essays of Elia I.
Never or Now	<i>Holmes.</i>	Poems.

Teachers will find good material for reading in such books as the following:

FIRST THREE GRADES.

- Andersen-Grimm. *Fairy Tales and Stories.*
 Andrews, Jane. *Seven Little Sisters.*
 Jordan, David Starr. *Book of Knight and Barbara.*
 McMurry, Mrs. Lida B. *Classic Stories for Little Ones.*
 Norton, Chas. E. *Heart of Oak Books*, Nos. 1 and 2.
 Poulsson, Emile. *In the Child's World.*
 Scudder, Horace E. *Fables and Folk Lore*, Nos. 1 and 2.
 Smythe, E. Louise. *Old Time Stories Retold.*
 Whittier, J. G. *Child Life in Poetry and Prose.*
 Wiggin-Smith. *The Story Hour.*
 Wiltze, Sarah E. *Morning and Kindergarten Talks.*

FOURTH TO EIGHTH GRADES.

Teachers are at liberty to make other selections if they can find ones more suitable. See suggestions, under Home Reading, as to interesting pupils in the work. Teachers may also read entire works to their pupils, if they wish to do so, selecting some good book of general interest. Care should be taken not to anticipate later required work. Such books as the following may be read entire:

- Alcott, Louisa. *Little Men or Little Women.*
 Burnett, Frances Hodgson. *Editha's Burglar.*
 Dana, R. H. *Two Years Before the Mast.*
 Earle, Alice Morse. *Child Life in the Colonies.*
 Field, Eugene. *Small Book of Profitable Tales.*
 Jordan, David Starr. *Matka and Kotik.*
 Long, Wm. J. *Wood Folk*, I. (Ginn & Co.)
 Longfellow, Henry W. *Courtship of Miles Standish.*
 Seton-Thompson, Ernest. *Wild Animals I Have Known.*
 Seton-Thompson, Ernest. *Biography of a Grizzly.*
 Stockton, Frank R. *A Book of Fanciful Tales.*
 Wiggin, Kate Douglas. *Bird's Christmas Carol.*
 Wiggin, Kate Douglas. *Story of Patsy.*

SELECTIONS FOR MEMORIZING.

Two kinds of selections should be used:

First—Complete selections in poetry or prose, such as "The Rainy Day"; and

Second—For grades above the Third, short terse sayings conveying some maxim or noble thought, such as: "One of the illusions is that the present hour is not the critical, decisive hour. Write it on your heart that every day is the best day of the year."—*Emerson*.

These two should be treated somewhat differently. The first is for memorizing and should be learned in whole or in part. In the case of long selections teachers may select parts, if they think best to do so. In each grade some attention should be given to teaching pupils *how* to memorize. Too many attempt to memorize words in the order in which they occur without regard to the thought involved. Selections to be memorized should be read aloud in a clear voice, with proper rhetorical pauses, and the thoughts involved should be explained by the pupils. Pupils should be encouraged to memorize by sentences, paragraphs or stanzas at once. After the selection has been learned there should be some attention to the proper delivery of it. Pupils should be trained from the first to repeat many of the selections from the platform or the front of the room and facing the class. Such drill will have a tendency to prevent the growth of self-consciousness. There should be distinct articulation and proper emphasis and inflection. A few of the quotations, such as "Sweet and Low," or "Landing of the Pilgrims," are best learned as songs.

With the second form of selection for memorizing, the short quotation, it is not so important that there be recitation or memory drill. The quotation should be written on the blackboard by the teacher, giving the author. Teachers are at liberty to make their own selections, but the quotations used should not exceed eight lines of poetry or prose and should be of a distinctively high order. An average of one short quotation a week should be placed on the blackboard. These should be copied by the pupils into a blank book or on paper set apart for that purpose, and the copying should be done as a part of the work in Penmanship. It is not necessary that each one of these be memorized to make the desired impression. Teachers may use discretion in the matter, though many of the quotations should be committed to memory.

The following list of longer selections should be followed by teachers, and at least three each term should be memorized. For most of the selections one place where they may be found is indicated.

"W. & F." means Williams and Foster's *Selections for Memorizing*; "Child Life" means Whittier's *Child Life in Poetry and Prose* (Riv. Lit. Series, No. 70-71); "Peaslee" means Peaslee's *Graded Selections*; and "Ap. 4th R." means Appleton's *Fourth Reader*. Teachers will find additional material in:

Stevenson, Robt. L. *A Child's Garden of Verse.*
 Dodge, Mary Mapes. *When Life Is Young.*
 Field, Eugene. *Love Songs of Childhood.*
 Riv. Lit. Series, No. 59. *Verse and Prose for Beginners.*

FIRST GRADE.

Sweet and Low.....	Tennyson.	The Princess.
The Owl and the Pussy Cat.....	Edmund Lear.	Child Life.
The Cloud	Unknown.	W. & F.
Little by Little	Unknown.	W. & F.
Children	Longfellow.	Cyr's 2d R., Poems.
Lazy Little Cloud	Unknown.	W. & F.
Sleep, Baby, Sleep.....	From the German.	Child Life.
Booh	Fields.	
Runaway Brook	Eliza Follen.	Riv. Lit. Sr. No. 59.
The Baby	Geo. MacDonald.	
Mr Shadow	Stevenson.	
Sleep, Baby, Sleep.....	Prentiss.	
Three Little Bugs in a Basket.	Alice Cary.	

SECOND GRADE.

The Children's Hour.....	Longfellow.	Poems.
Barefoot Boy (first ten lines).	Whittier.	Child Life.
The Boy and the Bird.....	Unknown.	W. & F.
Rain Drops	Unknown.	W. & F.
Seven Times One.....	Jean Ingelow.	Child Life.
Two and One.....	Unknown.	Peaslee, p. 11.
The New Moon.....	Mrs. E. Follen.	Child Life.
Twinkle, Little Star.....	Unknown.	W. & F.
If I Were a Sunbeam.....	Lucy Larcom.	Poems.
A Little Bit of a Fellow.....	Stouton.	
To My Mother.....	Field.	
The Night Wind.....	Field.	
The Lullaby	J. G. Holland.	Ecl. 2d R.

THIRD GRADE.

The Brown Thrush.....	Lucy Larcom.	W. & F.
The Wonderful World.....	Browne.	S. S. 3d R.
Is It You?.....	Unknown.	W. & F.
By and By.....	Unknown.	W. & F.

I Once Had a Sweet Little

Doll	<i>Chas. Kingsley.</i>
Selections from The Brook	<i>Tennyson.</i>
The Dandelion	<i>Unknown.</i>
If Ever I See	<i>Lydia M. Child.</i>
Drive the Nail Aright	<i>Unknown.</i>
Wynken, Blynken and Nod	<i>Eugene Field.</i>
Little Brown Hands	<i>M. H. Krout.</i>
Suppose	<i>Cary.</i>
America	<i>Smith.</i>
Lost	<i>Celia Thaxter.</i>
Dont' Give Up	<i>Phoebe Cary.</i>

Peaslee, p. 42.
Child Life.
Classic Stories, p. 94.
Nature in Verse.
W. & F.
S. S. 3d R.
Child Life.
W. & F.
W. & F.
Poems.
Poems.

FOURTH GRADE.

The Happiest Heart	<i>Cheney.</i>
Something Left Undone	<i>Longfellow.</i>
Suppose My Little Lady	<i>Phoebe Cary.</i>
Boys Wanted	<i>Unknown.</i>
The Fountain	<i>Lowell.</i>
Three Companions	<i>Dinah M. Craik.</i>
A Life Lesson	<i>Riley.</i>
Fiftieth Birthday of Agassiz	<i>Longfellow.</i>
The Sculptor	<i>Bishop Doane.</i>
Another Blue Day	<i>Carlyle.</i>
The Barefoot Boy	<i>Whittier.</i>
A Night with a Wolf	<i>Bayard Taylor.</i>
The Good Time Coming	<i>Chas. Mackay.</i>
The Brook and the Wave	<i>Longfellow.</i>
The Children's Hour	<i>Longfellow.</i>
Short Quotations on the Blackboard.	

S. S. 4th R.
Poems.
Peaslee, p. 36.
W. & F.
Poems.
Cyr's 3d R.
Afterwhiles.
Poems.
Peaslee, p. 83.
Peaslee, 110.
S. S. 4th R.
Child Life.
W. & F.
Poems.
Poems.

FIFTH GRADE.

Breathes There a Man	<i>Scott.</i>
The Village Blacksmith	<i>Longfellow.</i>
Break, Break, Break	<i>Tennyson.</i>
The Vicar's Sermon	<i>Chas. Mackay.</i>
The Three Fishers	<i>Kingsley.</i>
Nobility	<i>Alice Cary.</i>
Arrow and the Song	<i>Longfellow.</i>
Landing of the Pilgrims	<i>Mrs. Hemans.</i>
How Sleep the Brave	<i>William Collins.</i>
One by One	<i>Adelaide Procter.</i>

W. & F.
S. S. 4th R.
Poems.
W. & F.
Ap. 4th.
W. & F.
Poems.
W. & F.
W. & F.—Ap. 5th.
W. & F.

The Builders	<i>Longfellow.</i>	Poems.
The Will and the Way	<i>John G. Saxe.</i>	Peaslee, p. 114.
My Books	<i>John G. Saxe.</i>	Poems.
Childhood's Gold	<i>Lucy Larcom.</i>	Poems.
The Light That Is Felt	<i>Whittier.</i>	Poems.
Decoration Day	<i>Longfellow.</i>	Poems.
Somebody's Mother	<i>Unknown.</i>	W. & F.
The Heritage	<i>Lowell.</i>	Poems.
Telling the Bees	<i>Eugene Field.</i>	Poems.
XXIII Psalm		Bible.

Short Quotations on the Blackboard.

SIXTH GRADE.

Thanksgiving Hymn for California	<i>Mrs. Stetson.</i>	
The Day Is Done (Selections from)	<i>Longfellow.</i>	Poems.
The Last Leaf (Selections)	<i>Holmes.</i>	Poems.
Ring Out, Wild Bells	<i>Tennyson.</i>	W. & F.
Soldier, Rest	<i>Scott.</i>	Ap. 4th R.
There Is Ever a Song Somewhere	<i>Riley.</i>	Afterwhiles.
The American Flag	<i>Drake.</i>	Peaslee, p. 182.
The Rainy Day	<i>Longfellow.</i>	Poems.
Burial of Sir John Moore	<i>Wolfe.</i>	Ap. 4th R.
Over and Over Again	<i>Pollard.</i>	W. & F.
Psalm of Life	<i>Longfellow.</i>	Poems.
Another Blue Day	<i>Carlyle.</i>	Peaslee, p. 110.
Love of Country	<i>Scott.</i>	Peaslee, p. 188.
Order for a Picture (Selections)	<i>A. Cary.</i>	Poems.
A Night with a Wolf	<i>Bayard Taylor.</i>	Child Life.

Short Quotations on the Blackboard.

SEVENTH GRADE.

Vision of Sir Launfal (24 lines on June)	<i>Lowell.</i>	S. S. 4th R.
Westward—Columbus	<i>Joaquin Miller.</i>	S. S. 4th R.
Landing of the Pilgrims	<i>Mrs. Hemans.</i>	W. & F.

Bugle Song	<i>Tennyson.</i>	W. & F.
To a Skylark	<i>Shelley.</i>	Poems.
Sail On, O Ship of State	<i>Longfellow.</i>	Poems.
What Constitutes a State	<i>Jones.</i>	W. & F.
Crossing the Bar	<i>Tennyson.</i>	Poems.
Sound of the Sea	<i>Longfellow.</i>	Poems.
The Chambered Nautilus	<i>Holmes.</i>	Poems.
Song of Marion's Men	<i>Bryant.</i>	Poems.
Warren's Address	<i>Pierpont.</i>	W. & F.
Daybreak	<i>Longfellow.</i>	Poems.
Liberty or Death (Parts)	<i>Patrick Henry.</i>	Ap. 5th R.
Concord Hymn	<i>Emerson.</i>	S. S. 4th R.
Woodman Spare That Tree	<i>Geo. P. Morris.</i>	W. & F.
About Ben Adhem	<i>Leigh Hunt.</i>	Ap. 5th R.
Short Quotations on the Blackboard.		

EIGHTH GRADE.

My Captain	<i>Whitman.</i>	Poems.
Thanatopsis (Selections)	<i>Bryant.</i>	Poems.
A Man's a Man for a' That	<i>Burns.</i>	Poems.
Remembered Music	<i>Lowell.</i>	Poems.
To a Water-Fowl	<i>Bryant.</i>	S. S. Gram., p. 60.
Old Ironsides	<i>Holmes.</i>	W. & F.
Battle Hymn of the Republic	<i>Julia Ward Howe.</i>	
Liberty and Union	<i>Webster.</i>	W. & F.
The Shell	<i>Tennyson.</i>	H. of Oak VI.
Self Dependence	<i>Matthew Arnold.</i>	H. of Oak III; Poems.
Sun and Shadow	<i>Holmes.</i>	Poems.
Address at Gettysburg	<i>Lincoln.</i>	W. & F.
The Way to Heaven	<i>Holland.</i>	W. & F.
Selections from the Elegy	<i>Gray.</i>	Ap. 5th R.
True Rest	<i>Goethe.</i>	Peaslee, p. 169.
Flower in the Crannied Wall	<i>Tennyson.</i>	Poems.
The Present Crisis (Stanzas 1, 5, 6, 11, 15, 18)	<i>Lowell.</i>	Poems.
The Hand of Lincoln	<i>E. C. Stedman.</i>	Poems.
The Ladder of St. Augustine	<i>Longfellow.</i>	Poems.
Contentment	<i>Lucy Larcom.</i>	S. S. 4th R., p. 109.
The Recessional	<i>Kipling.</i>	
Short Quotations on the Blackboard.		

HOME-READING LISTS.

The object of such a list is not to outline a prescribed course in literature, which pupils must follow and upon which promotion will be based, but rather to indicate a number of good books which teachers should use to awaken, on the part of their pupils, an appreciation for good literature. Teachers are expected to use tact in reading from these books or in having them read at home, the object being to create a taste for and a habit of reading good literature, and thus direct in some measure the reading which children naturally do. This end can not be attained by perfunctorily following any list, but by putting into the work the spirit which will enlist the pupil's interest and hearty co-operation. The amount of work to be done is left to the discretion of the pupil and teacher. Some pupils, due to conditions of health, would best omit the work entirely, but pupils in good physical condition ought to be encouraged to read at least two books each term.

During the first and second years, and also during part of the third year, the selections should be read and re-read to the pupils by the teacher. As pupils acquire ability to read, some of the easier books may be loaned to them to take home, or they may be referred to the Public Library. In grades above the Third, the teachers will find it a good plan to begin a story with the class, and, after an interest has been awakened, refer the pupils to the book for the remainder of it. In all grades above the Second, it would be advisable to keep on the blackboard the titles with library numbers of a few of the better books selected from the list, and call the attention of pupils to them. Pupils have not the judgment to know what is best, and it is the duty of the teacher to guide them in their selections. To be able to do this intelligently, teachers should familiarize themselves with the books suitable for children of their grade.

The following list, recommended in part by the Library Section of the San Francisco Teachers' Club, is suggested to teachers:

FIRST AND SECOND GRADES.

(To be read by the teacher.)

Adams	<i>Nursery for Youngest Readers.</i>	
Andersen, H. C.	<i>The Fir Tree</i>	in j 291. An 26 d'
“ “	<i>The Little Match Girl.</i>	in j 291. An 26 d'
“ “	<i>Pea Blossoms</i>	in j 291. An 26 f

- Cox, Palmer *Brownies at Home* j 821. C 83
- Dodge, M. M. *Rhymes and Jingles* j 821. D 66 r
- “ “ *When Life is Young* j 821. D 66
- Frost, W. H. *Wagner Story-Book* j 291. F 92
- Gould, S. B. *Three Bears* in j 291. G 73
- Grimm *The Bremen Town Musicians* in j 291. G 88 g
- Jackson, H. M. F. *Cat Stories* j J 13. 1
- “ “ *Letters from a Cat* in j J 13. 1
- “ “ *Mammy Tittleback and Her Family* in j J 13. 1
- Jacobs, J. *Children in the Wood* in j 291. J 15 m
- Lane, M. A. S. *Stories for Children* j 810. L 24
- Magarine *Our Dumb Animals*.
- Mathews, J. H. *Flowerlets*.
- “ “ *Little Friends at Glenwood*.
- Mulock, D. M. *Adventures of a Brownie* j 291. M 91
- “ “ *Cinderella* in j 291. M 91 f
- “ “ *Hop-o-my-thumb* in j 291. M 91 f
- “ “ *Jack and the Bean-Stalk* in j 291. M 91 f
- “ “ *Little Red Riding-Hood* in j 291. M 91 f
- “ “ *Little Sunshine's Holiday* j M 91. 5
- Peabody *Five Little Peas*.
- Sanford, D. P. *Frisk and His Flock* j Sa 52. 2
- “ “ *Pussy Tip-toe's Family* j Sa 52. 3
- “ “ *Rose, Tom, and Ned* j Sa 52. 4
- Scudder, H. E., ed. *Book of Folk Stories* j 291. Scu 2
- “ “ *Children's Book* j 291. Scu 2 c
- Stickney, J. H., ed. *Child's Æsop's Fables* j 291. Ae 86 s
- Stoddard, W. O. *Adventures in Fairyland*.
- “ “ *Little Red Riding-Hood (verse)*.
- Stowe, H. B. *Queer Little People* j 590. St 75
- Wiggin, K. D. *Story of Patsy* j W 635. 11
- Wiggin, Smith *Story Hour* j W 635. 18
- Cook, Flora *Golden Hair and Blue Eyes*.
- “ “ *The Grateful Foxes*.
- “ “ *The Red Hen*.
- “ “ *The Robin*.
- “ “ *Clytie*.
- Harwell *Christmas all the Year Round*.
- “ *Chipmunk*.
- “ *Philemon and Baucis*.
- “ *The Anxious Leaf*.
- “ *Chipmunk*.

THIRD GRADE.

Bouvet, Margaret... *Prince Tip-Top*.....j B 665. 3
Brine, Mary D..... *Little Lad Jamie*.
" " *Bessie and Bec*.....j B 775. 3
Brooks, E. S..... *True Story of George Washington*.....j B. W 27 b r
Burnett, Frances H. *Editha's Burglar*.....j B 93. 1
" " *Two Little Pilgrims' Progress*.....j B 93. 7
Dodge, M. M..... *When Life Is Young*.....j 821. D 66
Eggleston, E. *Stories of Great Americans*.....j 810. Eg 33 g
Fletcher, R. H..... *Marjorie and Her Papa*.....j F 633. 1
Jackson, H. M. F... *Letters from a Cat*.....in j J 13. 1
Lang, A. *Prince Darling*.....in j 291. L 25 b
" *The Princess on the Glass Hill*.....in j 291. L 25 b
" *The Sleeping Beauty in the Wood*...in j 291. L 25 b
Miller, O. T..... *Four-handed Folk*.....j 599. M 61
Pearson, C. D. *Among the Meadow People*.....j 590. P 61
Plympton, A. G. *The Black Dog*.....j P 745. 5
Richards, Laura E... *Captain January*.....j R 39. 1
" " *Five-Minute Stories*.....j R 39. 9
Tucker, C. M. *Fannie Frisket*.
Wesseehoeft, S. F... *Jerry the Blunderer*.....j 291. W 51 j
White, E. O..... *Little Girl of Long-Ago*.....j W 58. 3
" " *When Mollie Was Six*.....j W 58. 5
Anderson, H. C..... *The Little Mermaid*.
Wiggin, K. D..... *The Birds' Christmas Carol*.
Dickens, Charles . . . *Dream of a Star*.

FOURTH GRADE.

(Any Third Grade book not previously read.)

Abbott, J. S. C. *Life of Paul Jones*. j B J 73 a
Alden, W. S. *Adventures of Jimmy Brown*. j Al 25. 1
Andrews, Jane *Seven Little Sisters Prove Their Sister-
hood* j An 283. 1
Bamford, M. E. *Talks by Queer Folks*. j 590. B 217
Beckwith, H. *In Mythland*.
Bouvet, Margaret . . . *Sweet William*.
" " . . . *Child of Tuscany*. j B 665. 1
Burnett, Frances H. . *Little Lord Fauntleroy*. j B 93. 3
" " . . . *Sara Crewe*. j B 93. 6
" " . . . *Little Saint Elizabeth*. j B 93. 4
" " . . . *Piccolo*. j B 93. 5
Carroll, Lewis *Alice in Wonderland*. j 291. C 23

- Church, E. R. *Home Animals*.....j 590. C 47 h
 " " *Little Neighbors at Elmridge*.....j 590. C 47 n
 Crockett, S. R. *Sweetheart Travelers*.....j C 87. 4
 Davis, A. C. *Stories of the United States*.
 Eaton, F. S. *Dollikens the Miser*.....j E a 85. 5
 Grimm, J. T. & W. K. *German Household Tales*.....j 291. G 88 g
 Grimms, R. M. S. *Man Without a Heart*.
 Hale, L. P. *Last of the Peterkins*.....j H 133. 2
 " " *Peterkin Papers*.....j H 133. 1
 Harris, Joel C. *Mr. Rabbit at Home*.....j 291. H 24 m
 " " *Three of Us*.
 Harrison, Elizabeth. *In Story-Land*.
 Hood, Margaret E. *Tales of Discovery on the Pacific Coast* j 970. H 76
 Jackson, H. M. F. *Bits of Talk*.....j 814. J 13
 Jamison, C. V. *Lady Jane*.....j J 24. 1
 Kirby, M. and E. *Aunt Martha's Corner Cupboard*.
 " " *The World by the Fireside*.
 Lang, A. *Animal Story-Book*j L 25. 1
 Litchfield, G. D. *Little He and She*.
 Longfellow, H. W. *Hiawatha*821. 888
 Menefee, Maude . . . *Child Stories from the Masters*.
 Molesworth, M. . . . *Children of the Castle*.
 Moodey, Martha S. *Little Millionaire*.
 Mulock, D. M. *Adventures of a Brownie*.....j 291. M 91
 " " *A Hero*.....M 960. 10
 " " *Little Lame Prince*.....j 291. M 91 m
 Ogden, Ruth *A Loyal Little Red-Coat*.....j O g 2. 5
 Pratt, Mara L. *Stories of Great Men*.
 Richards, Laura E. *Queen Hildegard*.....j R 39. 2
 " " *Queen Hildegard's Holiday*.....j R 39. 3
 " " *Captain January*.....j R 39. 1
 Saunders, Marshall *Beautiful Joe*.....j Sa 89. 2
 Schwatka, F. *Children of the Cold*.....j Sch. 9. 1
 Sewell, Anna *Black Beauty*.....j Se 83. 1
 Sidney, M. *Five Little Peppers, and How They Grew*.j Si 15. 1
 " " *Five Little Peppers Midway*.....j Si 15. 2
 " " *Five Little Peppers Grown Up*.....j Si 15. 3
 " " *Phronsie Pepper*.....j Si 15. 7
 Sprague, R. V. *The Shepherd's Dream*.
 Stockton, Frank R. *The Clocks of Roudaine*.....j 291. St 6 c
 Thaxter, Celia . . . *Stories and Poems for Children*.....j T 334. 1
 Thomas, E. M. *In Sunshine Land*.....j 821. T 36
 Woolsey, S. C. *What Katy Did*.....j C 775. 8
 Stockton, F. R. *Fanciful Tales*.
 Baldwin *The Horse Fair*.

FIFTH GRADE.

(Any Fourth Grade book not previously read.)

Alcott, Louisa M.	<i>An Old-Fashioned Girl</i>	j	Al 15.	17
Alden, W. S.	<i>Cruise of the Canoe Club</i>	j	Al 25.	3
Andrews, Jane	<i>Ten Boys on the Road from Long-Ago to Now</i>	j	An 283.	4
Brewster, M.	<i>Under the Water-Oaks</i>	j	B 755.	1
Bunyan, John	<i>Pilgrim's Progress</i>	j	B 888.	1
Church, Alfred J.	<i>Three Greek Children</i>	j	C 47.	13
Carpenter, Frank G.	<i>Geographical Reader—Asia</i>	j	915.	C 22
"	<i>Geographical Reader—S. Am.</i>	j	918.	C 22
Dodge, Mary Mapes.	<i>Hans Brinker</i>	j	D 66.	2
"	<i>Donald and Dorothy</i>	j	D 66.	1
Ewing, J. H.	<i>Jackanapes</i>	j	Ew 55.	2
"	<i>Jan of the Mill</i>	j	Ew 55.	3
"	<i>Story of a Short Life</i>	j	Ew 55.	11
Field, Eugene	<i>Love Songs of Childhood</i>	j	821.	F 45
Fernald, C. B.	<i>The Cat and the Cherub</i>		F 362.	3
Frost, W. H.	<i>Wagner Story-book</i>	j	291.	F 92
Gray, G. Z.	<i>The Children's Crusade</i>		940	248
Henty, G. A.	<i>True to the Old Flag</i>	j	H 39.	83
Ingersoll, E.	<i>Friends Worth Knowing</i>	j	590.	In 43
Jackson, H. H.	<i>Bits of Talk for Young Folks</i>	j	814.	J 13
Jak	<i>Birchwood</i>	j	J 21.	5
Jordan, David Starr.	<i>Matka and Kotik</i>	j	J 76.	1
Kingsley, Charles	<i>Greek Heroes</i>	j	291.	K 61
Kingsston, W. H. G.	<i>At the South Pole</i>	j	K 616.	3
"	<i>Stories of the Sagacity of Animals (2 Vols.)</i>	j	599.	K 61
Kipling, Rudyard	<i>The Jungle-Book</i>	j	291.	K 62
Long, W. J.	<i>Wood Folk at School</i>			
Martineau, Harriett.	<i>Peasant and the Prince</i>	j	M 363.	4
MacDonald, George.	<i>At the Back of the North Wind</i>	j	291.	M 14 d
Miller, Olive Thorne.	<i>Four-Handed Folk</i>	j	599.	M 61
Noel, M.	<i>Buz; The Life and Adventures of a Honey Bee</i>	j	595.	N 68
Page, T. N.	<i>Among the Camps</i>	j	P 143.	1
Perry, Nora	<i>Little Daughters of the Revolution</i>	j	P 425.	6
Plympton, A. G.	<i>Dear Daughter Dorothy</i>	j	P 745.	2
"	<i>Dorothy and Anton</i>	j	P 745.	3
"	<i>Little Sister of Wilfred</i>	j	P 745.	6
"	<i>Mary Jane Papers</i>	j	P 745.	1
"	<i>Wamolasset</i>	j	P 745.	7

- Pratt, Mara L. *American History Stories* (4 Vols.) j 973. P 38
 " " *Story Land of Stars*.
 " " *Stories of England*.
 " " *Stories of Northern Europe*.
 Pyle, Howard *The Wonder Clock* j 291. P 99. w
 Richards, Laura E. *Melody; The Story of a Child* j R 39. 6
 " " *When I Was Your Age* j B. R 39
 Setoun, G. *Child-World* j 821. Se 7
 Stockton, F. R. *Tales out of School* j 910. St 6
 " " *Roundabout Rambles in Lands of Fact and
 Fancy* j 910. St 6 r
 Thompson, E. Seton-*Wild Animals I Have Known* 596. T 37
 Thompson, E. Seton-*Biography of a Grizzly* 596. 49
 Tiffany, Nina Moore. *Pilgrims and Puritans* j 974. M 78
 " " *Colony to Commonwealth* j 974. M 78 f
 Waite, H. R. *A Boy's Workshop* j 600 B 69 w
 Warner, Chas. D. *Being a Boy* j W 243. 1
 Weyman, S. J. *Little Wizard* W 549. 9
 Yonge, Charlotte M. *Book of Golden Deeds* j 920. Y 8 g
 " " *Arabian Nights*.
 Hansen *Boy's King Arthur*.

SIXTH GRADE.

- Alcott, Louisa *Little Men* j Al 15. 11
 " " *Little Women* j Al 15. 13
 Aldrich, Thos. Bailey *Story of a Bad Boy* j Al 28. 1
 Andrews, Jane *Stories Mother Nature Told Her Children* j An 283. 3
 Ballantyne and
 Richardson *Man on the Ocean* j 797. B 212
 Baylor, F. C. *Juan and Juanita* j B 34. 3
 Boyesen, H. H. *Boyhood in Norway* j B 69. 2
 " " *Modern Vikings* j B 69. 3
 Brooks, N. *Boy Emigrants* j B 793. 1
 Brown, J. *Rab and His Friends* j B 814. 1
 Catherwood, M. H. *Rocky Fork* j C 28. 1
 " " *Heroes of the Middle West*.
 Church, Alfred J. *Stories of the Old World* j C 47. 20
 " " *Stories from Homer* j C 47. 6
 " " *Stories from Virgil* j C 47. 15
 Cox, Sir G. W. *Tales of the Gods and Heroes* j 291. C 83 t
 Custer, Mrs. E. *Boots and Saddles* 923 1778
 Dana, R. H. *Two Years Before the Mast* 9177. 32
 Davis, R. H. *Stories for Boys* j D 296. 1
 De Foe, Daniel. *Robinson Crusoe* j D 365. 1

- Diaz, A. M.....*William Henry Letters*.....j D 544. 4
 Drake, S. Adams....*The Taking of Louisburg*.....j 972. D 78 t
 Farmer, S. H.....*Story-Book of Science*.....j 500. F 22
 Grimm, J. S. & W. K.*German Household Stories*.....j 291. G 88 g
 Guerber, H. A.....*Story of the Chosen People*.....j 933. G 93
 " "*Story of the English*.....j 942. G 93
 " "*Story of the Greeks*.....j 938. G 93
 " "*Story of the Romans*.....j 937. G 93
 Hall, Captain*Adrift in the Ice Fields*.....j H 14. 1
 Hawthorne, N.*Tales of the White Hills*.....j H 314. 1
 Holder, C. F.....*Marvels of Animal Life*.....j 590. H 71 m
 Hooke, S.*Little People*.
 Jamison, C. V.....*Toinette's Philip*j J 24. 2
 Jewett, Sara Orne...*Betty Leicester*.....j J 55. 1
 Jewett, Sara Orne...*Play Days*.....j J 55. 4
 Johnson, R.*End of a Rainbow*.....j J 63. 1
 " "*Phaeton Rogers*.....j J 63. 2
 Jordan, David Starr.*Matka and Kotik*.....j J 76. 1
 Long, W. J.*Ways of Wood Folk*.
 Kingsley, Chas.*Water Babies*.....j 291. K 61 w
 Kipling, Rudyard*Jungle Book*.....j 291. K 62
 " "*Second Jungle Book*.....j 291. K 62 s
 Kirby, M. and E....*Sea and Its Wonders*.....j 551. K 63
 Larcom, Lucy*My New England Girlhood*.....j B. L 32
 McMurry, Chas.*Pioneer History Stories of the Mississippi Valley*.
 Miller, Olive Thorne.*Four-Handed Folk*.....j 599. m 61
 Molesworth, M. S....*Grandmother Dear*.....j M 73. 6
 " " ...*The Rectory Children*.....in j M 73. 16
 " " ...*Two Little Waifs*.....in j M 73. 6
 " " ...*Us; An Old-fashioned Story*.....j M 73. 16
 Ober, F. A.....*Crusoe's Island*.....j 918. Ob 2 s
 Ouida*Dog of Flanders*.....j Ou 43. 2
 Richards, Laura E....*Nautilus*.....j R 39. 7
 " "*Narcissa*.....R 516. 4
 Seawell, M. E.....*Little Jarvis*.....j Se 12. 2
 " "*Midshipman Paulding*.....j Se 12. 4
 " "*Rock of the Lion*.....j Se 12. 6
 Scudder, Horace E..*The Bodley Books* (8 vols.).....j Scu 2. 1-8
 Thorpe, M.*King Frost*.....j 551. T 39
 Thompson, E. Seton*Trail of the Sandhill Stag*.....T 471. 9
 Towle, G. Makepeace.*Magellan*.....j B. M 27 t
 " "*Drake, the Sea-King of Devon*.....j B. D 78 t
 " "*Vasco da Gama*.....j B. G 14 t
 " "*Heroes and Martyrs of Invention*.....j 920. T 65

- Wagner, Harr *Pacific History Stories* v I. j 970. W 12
 " " *Pacific Nature Stories* v II
 Wiggin, Kate D'glas. *Timothy's Quest* j W 635. 14
 " " *Polly Oliver's Problem* j W 635. 8
 Wyss, J. D. *Swiss Family Robinson* j W 99. 1
 Yonge, Charlotte M. *The Daisy Chain* Y 555. 8
 " " *The Trial: More Links of the Daisy Chain*. Y 555. 33
 " " *Pillars of the House* (2 vols.) Y 555. 27
 Boy Hunters, by Reed.
 Old Stories of the East.

SEVENTH GRADE.

(Any Sixth Grade book not previously read.)

- Ayrton, C. *Child Life in Japan* j 915. A y 74
 Austin, Jane G. *Standish of Standish* A 936. 12
 Baldwin, James *Story of the Golden Age* j 291. B 19 g
 Bolton, Sarah K. *Famous Voyagers* j 920. B 63 v
 " " *Poor Boys Who Became Famous* j 920. B 63 P
 " " *Lives of Girls Who Became Famous* j 920. B 63 g
 Boyesen, H. H. *Against Heavy Odds* j B 69. 1
 Brooks, E. S. *Century Book for Young Americans* j 342. B 79
 Brooks, N. *Boy Emigrants* j B 793. 1
 " " *Boy Settlers* j B 793. 2
 Buckley, Arabella *Fairy-Land of Science* 504. 20
 " " *The Winners in Life's Race* j 596. B 85
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 Dana, R. H. *Two Years Before the Mast* 9177. 32
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 Greene, Homer *Coal and the Coal Mines*.....628, 246
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 Henty, G. A. *With Wolfe in Canada*.....j H 39. 93
 Hittell-Faulkner *Brief History of California*, II
 Higginson, Mrs. S. J. *Java, the Pearl of the East*.....j 919. H. 53
 Hawthorne, Nathaniel *House of Seven Gables*.
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 Knox, T. W. *Travels of Marco Polo*.....j 910. P 76 k
 Keller, Helen *Autobiography*.
 La Fontaine, J. de... *Fables*.....in j 291. Ae 86 s
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 Lodge, H. C., and } *Hero Tales from American History*...j 973. L 82 h
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 Loughhead, F. H. *Abandoned Claim*.....j L 92. 1
 Long, W. J. *Secrets of the Woods*.
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 Marden, O. S. *Success*.....j 170. M 33 s
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 Munroe, K. *Flamingo Feather*.....j M. 92. 5
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 Ober, F. A. *Crusoe's Island*.....j 918. Ob 2 c
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 Perry, Nora *Three Little Daughters of the Revolution*..j P 425. 6
 Pyle, H. *Men of Iron*.....j P 99. 2
 " " . . . *Otto of the Silver Hand*.
 Pratt, Mara L. *Stories of India*.....j 954. P 88
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 " " . . . *Stories of Australia*.
 " " . . . *Stories of the Great West*.....j 977. P 88
 " " . . . *Cortez and Montezuma*.....j 920. P 88 c
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 Seawell, M. E. *Twelve Naval Captains*.....j 920. Se 12
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 Thompson, E. Seton *Wild Animals I Have Known*.....j 596. T 37
 " " . . . *Biography of a Grizzly*.....596. 49
 Towle, G. Makepeace *Pizarro: His Adventures and Conquests*.j B. P 689 t
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EIGHTH GRADE.

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- Asbjornsen, P. C. ... *Popular Tales from the Norse*.....j 291. As 14 p
 Baldwin, J. *Story of Roland*.....j 291. B 19 r
 " *Story of Siegfried*.....j 291. B 19 s
 Barnes, J. *For King or Country*.....j B 26. 1
 " *Naval Actions of the War of 1812*.....973. 936
 " *A Loyal Traitor*.....j B 26. 4
 Brooks, E. S. *True Story of U. S. Grant*.....j B. G 76 b
 Bolton, Sarah K. ... *Famous Types of Womanhood*.....920, 452
 " " *Famous Men of Science*.....j 920. B 63 s
 Bunyan, J. *Pilgrim's Progress*.....j B 888. 1
 Burroughs, J. *Wake-Robin*824. 301
 Byron, Lord *Prisoner of Chillon*.....in 821. 1167
 Cable, Geo. W. *The Cable Story Book*.
 Chester, E. *Girls and Women*.....!.....176. 2
 Church, A. J. *Stories from English History to Charles I.*...j C 47. 23
 " " *Stories from the Bible*.....j C 47. 1
 " " *Young Macedonian*.....j C 47. 28
 Clemens, Sam'l
 (Mark Twain).... *Prince and Pauper*.....j T 91. 2
 Coffin, Chas. C. *Building of the Nation*.....j 973. C 65 c
 " " *Drumbeat of the Nation*.....j 973. C 65 c
 " " *Freedom Triumphant*.....j 973. C 65 h
 Cooper, J. Fenimore. *The Pilot*.....C 777. 26
 Darwin, Charles *Voyage of the Beagle*.....j 508. D-25
 Davis, M. E. M. *Under Six Flags*.
 Dickens, Charles ... *Child's History of England*.....j 942. D 55
 " " *David Copperfield*.....D 548. 14
 " " *Tale of Two Cities*.....D 548. 4
 Du Chaillu, P. B. .. *Wild Life under the Equator*.....j 916 D 85 w
 Eliot, George *Mill on the Floss*.....E 426. 6
 Fouqué, Baron *Undine*.....L 235. 6
 Gibson, W. H. *Eye Spy*590. 176
 Gilman, A., ed. *Magna Charta Stories*.....j 940. G 42
 Griffis, Wm. E. *Brave Little Holland*.....j 949. G 87
 Goldsmith, Oliver .. *Vicar of Wakefield*.....j G 57. 1

- Grinnell, G. B. *Blackfoot Lodge Tales*.....899. 49
 " " *Stories of the Indian*.....970. 199
 Hale, Edw. E. *Man without a Country*.....H 161. 9
 Hamerton, P. G. *Chapters on Animals*.....j 590. H 17
 Henty, G. A. *Dragon and the Raven; or, The Days of
 King Alfred*.....j H 39. 29
 " *In the Reign of Terror*.....j M 39. 46
 " *With Clive in India. (18th Century)*.....j H 39. 89
 " *Wulf the Saxon (Norman Conquest)*.....j H 39. 95
 Hughes, T. *Tom Brown's School Days*.....j H 875. 1
 Inman, H. *Old Santa Fe Trail*.....977. 224
 Jackson, Helen Hunt. *Ramona*J 127. 4
 Janvier, T. A. *Aztec Treasure House*.....J 358. 1
 Kipling, Rudyard ... *Captains Courageous*.....j K 627. 3
 Lamb, C. *Adventures of Ulysses*.....j 291. L 16
 Lang, A. *Red True Story Book*.....j L 25. 5
 " *True Story Book*.....j L 25. 6
 Lanier, S., ed. *Boy's Percy*.....j 821. P 41 1
 Lummis, C. F. *Spanish Pioneers in America*.....j 970. L 97
 " *Tramp Across the Continent*.....9173. 543
 Manning, A. *Household of Sir Thomas More*.....923. 449
 Marden, O. S. *Pushing to the Front*.....j 920. M 33
 Matthews, Brander. *Introduction to American Literature*.....820. 252
 Miller, Olive Thorne. *Bird Ways*.....598. 124
 Optic, Oliver *Up and Down the Nile*.....j Op. 73. 7
 Page, Thos. N. *Two Little Confederates*.....j P 143. 2
 Repplier, Agnes ... *Book of Famous Verse*.....j 821. R 30
 Richardson, A. S. ... *Stories from Old English Poetry*.....j 821. R 393
 Rolfe, William J. ... *Shakespeare the Boy*.....928. 904
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 Scott, Walter *The Talisman*.....S 431. 5
 " " *Ivanhoe*.....j Sco 8. 3
 Stevenson, Robt. L. *Treasure Island*.....j St 46. 4
 Stockton, Frank ... *Beeman of Orn and Other Fanciful Tales*.j 291. St 6
 Stoddard, C. A. ... *Cruising Among the Caribbees*.....9179. 63
 Stowe, Harriet B. ... *Uncle Tom's Cabin*.....j St 75. 3
 Twain, Mark *Tom Sawyer*.....j T 91. 3
 Warner, Charles D. ... *A Hunting of the Deer*.....j 796. W 24
 Yonge, Charlotte ... *Unknown to History*.....Y 555. 37
 Life of Lincoln.
 Wallace, L. *Ben Hur*.
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 Burroughs, J. *Birds and Bees*.
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 Porter *Scottish Chiefs*.

REFERENCES.

The following books and articles are easily accessible and will be found very helpful by teachers of Reading and Literature:

Arnold, Sarah S. *Waymarks for Teachers*, pp. 152-176.

Balliett, T. M. Association of Ideas in Reading, *Proc. N. E. A.*, 1893, pp. 756-760.

Chase, Susan F. Choice of Reading for Early Adolescent Years, *Proc. N. E. A.*, 1898, pp. 1011-1015.

Clark, S. H. *How to Teach Reading in the Public Schools*.

Clark, S. H. Reading Aloud in the Public Schools, *Educ. Rev.*, Vol. XV, pp. 255-268 (March, 1898).

Corson, Hiram. Voice Culture in Relation to Literary Culture, *Atl. Mo.*, June, 1895.

Griffith, Geo. Course of Reading for Children at Utica, N. Y., *Educ. Rev.*, Vol. XV, pp. 65-70 (Jan., 1899).

Hardy, Geo. E. The Function of Literature in Elementary Schools, *Educ. Rev.*, Vol. II, pp. 140-150 (July, 1891).

McMurry, Chas. *Special Method for Reading* (Pub. Sch. Pub. Co., 40c.). Very good.

Scudder, H. E. Literature in the Public Schools, *Atl. Mo.*, Aug. 1888.

Thurber, Saml. How to Make the Study of Literature Interesting, *Sch. Rev.*, Vol. VI, pp. 483-500 (Sept., 1898).

Van Liew, Lucas. *Phonics and Reading* (Pub. Sch. Pub. Co., 35c.).

NATURE STUDY*

Nature Study develops perception and imagination, forms habits of observation, cultivates a love of nature and an appreciation of the world about us. As such its study in correlation with reading, language, etc., is helpful and inspiring.

The endeavor to substitute it for the fundamental branches or to study it as a science for knowledge or facts is not encouraged.

Correlate closely with other subjects. Class-room work may be supplemented by visits to the parks and museums and, by the use of pictures and lantern slides. Stories, fables, songs and other literature pertaining to the objects studied should be carefully read to the pupils.

* This work is optional with each school.

It should be clearly understood that no class can study all of the topics in Nature Study that are suggested in the list. In selecting the topics of study it is suggested that teachers choose those objects which are near at hand—the common rather than the rare. The teacher may select any of the work laid down for her grade or work in any previous grade that has not been studied by the class.

FIRST GRADE.

Talk to and question pupils about sky, fields, trees, plants, flowers, fruits, birds, animals. Select topics from the following suggestive outline:

ANIMALS.—Name and recognize common animals: Dog, cat, horse, cow, mouse. Talk about peculiar characteristic features and movements. Question on color, covering, food, use, etc. Inculcate kindness to animals.

BIRDS.—Name and recognize common birds: Robin, bluebird, canary, parrot, sparrow, duck, chicken, goose. Talk about peculiar characteristics—color, song, food, movements, etc. Dwell on the cruelty of killing birds. Use colored pictures.

PLANTS AND FLOWERS.—Name and recognize common plants: Golden-rod, aster, mustard, nasturtium, geranium, chrysanthemum. Dwell on parts: Root, stem, leaf, shape, color. Select flowers that grow in the vicinity, such as dandelion and nasturtium. For study take a simple flower whose parts can be plainly seen. Teach children to handle flowers carefully and not to tear up wild flowers by the roots. Wild flowers are disappearing on account of carelessness of gatherers. Explain the distribution of seeds—by wind, by bursting pods, by animals, by water, by birds, by insects, by men.

TREES AND FRUITS.—Name and recognize eucalyptus, oak, maple, apple, peach, pear. Discuss color, odor, taste and use. Advise against forest devastation. Explain the object of Arbor Day.

VEGETABLES.—Name and recognize corn, bean, cabbage, potato, onion, turnip, pea. Talk about growth. Refer to school gardens.

SECOND GRADE.

Read and follow instructions for First Grade. Review and enlarge on topics assigned.

ANIMALS.—Dog, cat, horse, cow, mouse, monkey. Dwell more fully on characteristic features—parts, head, eyes, covering,

size, color, movements, actions, food, uses, habits, winter and summer.

BIRDS.—Robin, bluebird, canary, parrot, sparrow, duck, chicken, goose, turkey. Dwell more fully on characteristic features—parts, head, eyes, covering, size, color, movements, actions, songs, calls, etc.

PLANTS AND FLOWERS.—Golden-rod, aster, nasturtium, geranium, chrysanthemum, dandelion, violet, daisy, clover, poppy, tulip, pansy, lily. In study of plants and flowers follow directions for First Grade. Explain the growth and needs of plant life. Emphasize moisture, heat, light.

TREES AND FRUITS.—Oak, maple, willow, pepper tree, spruce, pine, apple, peach, pear, plum.

VEGETABLES.—Corn, bean, cabbage, potato, onion, turnip, pea, tomato, radish. Talk about growth, color, parts, uses, characteristic features. See school gardens.

INSECTS.—Name and recognize common insects: Fly, bee, butterfly, grasshopper, ant, wasp. Discuss characteristic features, color, habit, movements, sounds, food, home.

Books for teacher's desk:

Overton and Hill. *Nature Study*.

Lange, D. *Handbook of Nature Study*.

Bailey, L. H. *The Nature Study Idea*. A book so full of suggestions that every teacher ought to read it.

THIRD GRADE.

FOUR-FOOTED ANIMALS.—Horse—its traits, uses and care; donkey, mule, comparison with horse; camel, deer, goat, sheep. Recognition and name; observation and oral description; their color, characteristic parts, coverings, food, uses, movements, homes, habits and care of young. Lessons on kindness to animals.

Lessons on kindness to animals.

BIRDS.—Bluebird, scarlet tanager, robin, swallow. Recognition and name; their color, movements, food, songs or calls, sociability. Return of birds, nest building, brooding, care of young. Hen and chicks compared with other birds.

INSECTS.—Butterflies, moths, cabbage butterfly. Metamorphosis; colors; why they visit flowers.

SEEDS AND SEEDLINGS.—Sunflower, morning glory, nasturtium, radish. Seeds; sprouting of seeds observed; the different ways in which the seedlings come out of the ground; parts of seedlings—roots, stem, leaves; uses of parts to plant. The need of light and warmth should be shown by growing seedlings in

warm, cool, cold, dark and light places. Pupils should be encouraged to raise plants from seeds at home.

DEVELOPMENT OF BULBS.—Onion, hyacinth, tulip, crocus. Bulbs placed in moist sawdust, soil or water; observation of the development of roots, stem and leaves.

FLOWERING PLANTS.—Buttercup, calla, columbine, poppy, lupine, wild pansies, star of Bethlehem, pink; daffodil, sweet pea, honeysuckle. Recognition and name, color, odor. A love of flowers should be cultivated. The tendency on the part of many children to destroy wild flowers should be discouraged. The method of preserving wild flowers should be illustrated.

FRUITS AND VEGETABLES.—Strawberry, loganberry, cherry, currant, raspberry, apricot, asparagus, lettuce. Color, odor, taste, parts, uses.

NATURAL PHENOMENA.—Observation of qualities of water, ice, steam. Observation of winds—force, visible effects. Observation of clouds—motion, color, portent; storms; rainbow. Weather conditions noted and recorded. Sun—light, heat, rising and setting; day and night. Stars. Moon—light, rising and setting, phases.

Books for teacher's desk—Same as Second Grade.

FOURTH GRADE.

ANIMALS.—Various types of animals, including cold-blooded animals, birds and insects.

PLANTS.—Flowers, fruits, vegetables and trees.

EARTH STUDY.—Land and water forms in the vicinity. Soil; metals and minerals. Direction and distance; points of the compass.

NATURAL PHENOMENA.—The sun; effects of heat and cold on water, on soil, on plant and animal life; changes of season.

BIRDS.—Resident birds: Woodpecker, owl, bluejay, crow, linnnet, humming bird, gulls, English sparrow, eagle, snipe, ostrich. Their plumage, songs or calls, habits, food, size, color, motions, uses, feet and bill.

INSECTS.—Monarch butterfly, caterpillars, metamorphosis; beetle, dragon-fly, mosquito, house fly, plant pests in the school garden. Head, body, legs, wings, feelers, distinctive markings, breeding places, food, movements, uses to man, dangers to man.

OTHER ANIMALS.—Wolf, fox, comparison with dog; snakes, turtles, water dogs, frogs, goldfish and minnows in aquarium, lobster, crab. Recognition and name; striking characteristics; their covering, food, uses, movements, homes and habits.

FLOWERING PLANTS.—Gladiolus, hydrangea, coreopsis, dahlia, carnation, rose. Recognition and name of flowers, color, odor. Pupil should be encouraged to care for flowers.

FRUITS AND SEEDS.—Pumpkin, squash, cranberries, melons, stick-tights, burrs, dry seeds, nuts, stone fruits, pods. How seeds are protected while ripening; adaptations for dispersal by wind, water, birds, hairy animals; sections made of fruits to show attachments of seeds.

OYSTER, CLAM.—Habitat, food, manner of feeding, characteristic parts. Comparison of snails or slugs with clam.

EARTH WORMS.—Habitat, form, color, food, segments, uses, enemies; comparison with caterpillar. Earth worms may be kept in pots of earth in class room and observations made of their locomotion, castings and feeding habits.

ANIMALS USEFUL TO MAN.—Birds, bats, toads, frogs, fish, turtles, ladybugs, beetles, dragon-flies, bees, silk worms, cochineal bugs, sheep, cow, goat, hen, goose, duck, ox, horse, donkey, mule, camel. Particular emphasis should be placed on their value to man: (1) as destroyers of injurious insects; (2) as the source of supply of useful materials, including materials for clothing, food, furniture and ornaments; (3) as beasts of burden.

ANIMALS HARMFUL TO MAN.—Cut-worm, potato beetle, cabbage worm, leaf rollers, leaf miners, plant lice, army worms, gipsy moth, codling moth, beetles, tent caterpillars, canker worms, clothes moths, cockroach, flies, bedbugs, ants, mosquitoes, snails, slugs, rats, mice. Particular emphasis should be placed upon their injuries to man, harmful stage, extermination, work of the government in destroying pests.

EARTH STUDY.—Collection of metals and minerals for class study; distinguishing characteristics and uses of slate, marble, granite, mica, quartz, aluminum and sandstone; the making of brick and cement work; elementary classification.

Books for teacher's desk:

Nature Study with Common Things, by M. H. Carter.

Mollusca: Oyster, Clam and Other Common Mollusks, by Alpheus Hyatt.

Common Minerals and Rocks, by W. O. Crosby.

Worms and Crustacea, by Alpheus Hart.

The Horticulturist's Rule Book, by L. H. Bailey. Very full information on injurious insects, with remedies and preventives, etc.

Nature Study and Life, by Clifton F. Hodge.

FIFTH GRADE.

PLANTS.—Woody plants; industries dependent on forests; plants without wood; useful plant products; protection of trees in cities.

TREES.—Uses to tree of bark, of wood, and of pith; annual rings and medullary rays (study cross and long sections of pieces of woods); uses of heart wood and of sap wood to plants and to man; movements of sap (maple); blossoming and fruit-formation of fruit and shade fruits; use of wood in building and in furniture (collections); use of trees in producing rainfall. Emphasis should be given to the protection of trees in city streets.

FORMS OF STEMS.—Erect, prostrate, climbing by tendrils, twining by stem or petiole; why plants seek erect position; underground stems (potato) and bulbs (onion); uses of stored nourishment to plants.

PLANT PRODUCTS USEFUL TO MAN.—Vegetables classified as roots, stems, leaves, bulbs or fruits. Fruits classified as fleshy, stone and dry. Medicines and spices—bark, leaves, sap, extracts. Clothing—cotton, linen. Woods—those used for building or furniture; characteristics which fit them for this use.

Books for teacher's desk:

A Primer of Forestry. Bulletin 24, Division of Forestry, U. S. Dept. of Agriculture, by Gifford Pritchot. Free.

Guide to Trees, by Alice Lounsberry.

Agriculture for Beginners, B. C. W. Binkett, F. L. Stevens and D. H. Hill.

SIXTH GRADE.

Influence of agriculture upon man. Could a densely populated country subsist on game and wild fruits? Is a high civilization possible without an abundant and regular food supply? Say a few words about agricultural schools; the School of Agriculture at University of California. The teacher should visit this school. Domesticated animals and cultivated plants as factors in civilization. One or two review lessons.

Encourage the pupils to plant a few flowers and vegetables on their home lots, and, if possible, start a small school garden. The larger boys can do the work after school hours. Plant only a few flowers or vegetables.

References:

Hemenway. *How to Make School Gardens.*

Bailey. *Cyclopedia of American Horticulture.* This contains

articles on every cultivated fruit, flower and vegetable in America. It is excellent and ought to be in each school library.

SEVENTH GRADE.

Take up fishes sold in the stores—halibut, herring, salmon, pike, croppie, mackerel, red snapper, white cod, sturgeon, eel, catfish or bullheads. Lake Tahoe trout are suggested.

A complete and interesting life history of all of these is found in Jordan and Everman's *American Food and Game Fishes*.

Other references:

Lange. *Handbook of Nature Study*, pages 295, 296, etc.

Hodge. *Nature Study and Life*, page 413.

Call attention to the immense injury done to crops by insects.

Lange, page 210.

In the Low Seventh study the propagation of plants by seeds, cutting, budding and grafting. Study fertilization of plants by insects and the part played by color, odor and honey. How plants attract their friends; how they repel their enemies by hairs, thorns, poisons, etc. Fertilization by wind. Why do such flowers lack color, odor, honey? Make these studies in connection with school gardening. For reference see *Lessons with Plants* by Bailey and *Experiments with Plants* by W. J. V. Osterhout.

In the High Seventh study the food digestion of plants, and in contrast study fungi, including mushrooms, toadstools, molds, mildews, blights, and the plant diseases caused by these. See references above and *Bacteria Yeasts and Molds in the Home* by Conn.

EIGHTH GRADE.

REVIEW OF PLANT LIFE.—Classification of plants: Flowerless plants, parasitic fungi, mushrooms and puffballs, mosses and liverworts, lichens, and ferns. Briefly point out what part these groups play in the household of nature. Show briefly how man has influenced and changed the distribution of plants on the earth. See Lange, *Nature Study*, pages 90, 305, 312.

Other references:

Goff & Mayne. *First Principles of Agriculture*.

Jenkins & Kellogg. *Lessons in Nature Study*.

In the Low Eighth give special attention to bacteria which produce disease. Show how these propagate and how they are communicated. Show how disease is being prevented by study of bacteriology. Discuss some of the more common diseases and

precautions to be taken against them. From this point of view discuss hygiene of the person, of the home. What is the city doing to prevent spread of disease? What is the work of the Board of Health? What does the federal government do in the way of quarantine? Where is the Quarantine Station? How is science being applied to cure or prevent diseases of animals? Put all this in very simple language, illustrating with simple drawings.

In the High Eighth let the nature study take the form of experiments, excursions and observations in Physical Geography.

SUPPLEMENTARY LIST OF BOOKS AND HELPS FOR NATURE STUDY.

This is not intended for a complete list of all the good books on this subject, but merely a list of books which the compiler feels are well suited for teachers and students for a working library.

SECTION I. GENERAL WORKS.

1. Lange, D. *Handbook of Nature Study*. Gives work on birds, flowers, trees, animals and insects for all seasons.

2. Hodges, C. F. *Nature Study and Life*. Similar to No. 1. Very good.

3. Wilson, Lucy L. W. *Nature Study*. Teachers' Manual. Gives hints on poems and other literature to correlate with Nature Study.

4. Lange, D. *Our Native Birds*. Tells how to attract and protect birds by feeding them in winter, making nesting boxes, providing water, nesting material, etc. Contains special Bird Day material.

5. Blanchan, Neltje. *How to Attract the Birds*. Similar to No. 4. Very good.

6. Bailey, L. H. *The Nature Study Idea*. A book so full of suggestions that every teacher ought to read it.

Books numbered 1 and 2 will enable teachers and pupils to do good work in Nature Study. If you can procure all six, you have the beginning of a good working Nature Study library. Get as many other books as you can.

SECTION II. BIRDS.

1. Chapman, Frank M. *Bird Life*. Popular edition in colors. Contains 75 colored plates. The best book for beginners

of bird study. Identifies birds and discusses bird life in general.

2. *Colored Bird Pictures*. Issued by "Birds and Nature," Chicago. Two and three cents each. Send for list and select what you want.

3. Lange, D. *Wild Birds of Minnesota and of Wisconsin*. Identifies about 125 Minnesota birds.

4. *Audubon Bird Charts*, I and II. Each chart shows about 25 common birds in natural size and colors. Descriptive circular sent on application.

5. Chapman, Frank M. *Handbook of Birds of Eastern North America*. For somewhat advanced students. Treats of all birds found east of the Mississippi.

6. Blanchan, Neltje. *Birds That Hunt and Are Hunted*. Perhaps the best book on game birds and birds of prey. For teachers and schools.

7. Herrick, Francis H. *Home Life of Wild Birds*. With numerous photographs by the author. A very interesting and suggestive book.

8. Miller, Olive T. *True Bird Stories*. Easy and interesting reading.

9. Burroughs, John. *Biography of John James Audubon*. Best short biography of the father of American ornithology. Should be in every school.

10. Huntington, Dwight W. *Our Feathered Game*. A good book for boys and sportsmen.

11. Lange, D. *Wild Birds of the Several States*. Guides for Illinois, Indiana, Ohio, Missouri and New England States are ready. Others in press.

12. Scott. *Story of a Bird Lover*.

SECTION III. INSECTS.

1. Comstock, John Henry. *Insect Life*. Tells how to construct breeding cages, aquariums, collect insects, etc. The best book for common schools and beginners in the study of insects.

2. Scudder, Samuel H., *Everyday Butterflies*. Gives life history of about seventy common butterflies. Very interesting and readable.

3. Scudder, Samuel H. *Life of a Butterfly*. Gives interesting account of the life history, migrations, etc., of the common monarch or milkweed butterfly.

4. Holland, W. J. *Butterfly Book, The*. Numerous colored plates. Best book on butterflies for schools and general public.

5. Howard, Dr. L. O. *Insect Book*. Best reference book on insects for schools and the general public. Many colored plates. Does not include beetles and butterflies.

6. Weed, Clarence Moore. *Insect World*. One of the volumes in the Home Reading Series.

7. Comstock, John Henry. *Manual for the Study of Insects*. Similar to No. 1, but larger and more advanced.

8. Weed, Clarence Moore. *Nature Biographies*. Studies of some common butterflies, moths, grasshoppers, flies, etc. With photographs by the author.

9. Patterson, Alice J. *The Spinner Family*. With many illustrations. A good account of our common spiders.

SECTION IV. ANIMALS (MAMMALS).

1. Ingersoll, Ernest. *Wild Neighbors*. Interesting accounts of several common animals.

2. Stone, Witmer, and Cram, Wm. E. *Animal Book*. The best book for facts and information about American animals. Contains numerous photographs.

3. Jordan, David Starr. *Manual of Vertebrates*. For identifying mammals, birds, reptiles and fishes by means of keys, similar to those used by Gray for plants. An excellent book for its purpose. A fine book for campers, fishermen and hunters.

4. Thomson. *Story of Animal Life*. The best general scientific account of the subject.

SECTION V. FISHES AND AQUATIC LIFE.

1. Jordan, David Starr, and Evermann, Barton W. *American Food and Game Fishes*. Illustrated. The best book on fishes for boys, the general reader and schools.

2. Jordan, David Starr. *Manual of Vertebrates*. Very good for identification. See No. 1, Section IV.

3. Baker, Frank C. *Shells of Land and Water*. A popular introduction to the study of mollusks. Illustrated. Very good.

SECTION VI. FLOWERS AND PLANTS IN GENERAL.

1. Lounsberry, Alice. *Guide to the Wild Flowers*. Sixty colored illustrations, 104 figures in black and white. Perhaps the best book for quick identification of flowers.

2. Mathews, F. Schuyler. *Fieldbook of American Wild Flowers*. Twenty-four colored plates, seventy figures in black and white from water colors and drawings by the author. Handy pocket edition, flexible covers, otherwise similar to No. 1. Another edition, stiff cloth cover, net \$1.75.

3. Mathews, F. Schuyler. *Familiar Flowers of Field and Garden*. Illustrated by the author. Refers principally to field and garden flowers. Pocket edition, flexible covers. Another edition, stiff board cover, net \$1.40.

4. Bennett, Ida D. *The Flower Garden*. A practical book for the teacher and housewife. Should be in every school building. Illustrated.

5. Burkett, C. W., Stevens, F. L., and Hill, D. H. *Agriculture for Beginners*. A practical and suggestive book. Just the thing for boys and girls and their teachers. Should be in every school house.

6. Britton, Nathaniel Lord, and Brown, H. Addison. *Illustrated Flora*. Three volumes. The only work which describes and figures every flowering plant in Eastern North America. Enables one to identify quickly all wild plants, including such difficult genera as grasses, composites, willows, etc. Should at least be in every high-school library.

7. Gray, Asa. *Field, Forest and Garden Botany*. Revised by L. H. Bailey. Identifies the more common wild plants and all common house and garden plants by means of analytical keys. No illustrations. No other book describes so many cultivated plants.

8. Gray, Asa. *Manual of Botany*. Tourists' Edition. Flora only. Identifies by keys practically all wild plants in the North-eastern United States. Best book of its kind. No illustrations. Another edition, stiff cloth cover, net \$1.62.

9. Coulter, John M. *Plant Relations*. Gives a good account of how plants work and live.

SECTION VIII. FLOWERLESS PLANTS.

1. Atkinson, George Francis. *Mushrooms, Edible, Poisonous, etc.*

2. Marshall, Nina L. *Mushroom Book*. Both this and No. 1 are profusely and finely illustrated, and it would be difficult to say which is the best.

SECTION IX. BOOKS FOR GENERAL READING.

The numbers affixed to the titles indicate the age at which pupils may read them with interest and profit. All the books are suitable for older pupils and for adults.

Abbott, C. C. *Rambles of a Naturalist About Home*. (11.)

Burroughs, John. *Locusts and Wild Honey*. (14.)

Burroughs, John. *A Year in the Fields*. (14.) Illustrated, and with biographical sketch of author.

Burroughs, John. *Riverby*. Essays. (14.)

Dugmore, A. Radclyffe. *Nature and the Camera*. Shows how to photograph birds, animals, flowers, insects, fishes and outdoor objects generally. Numerous photographs by the author. Very practical.

Edwards, Clarence E. *Campfires of a Naturalist*. (10.) Tells about hunting and the haunts and habits of American big game.

Thompson, Maurice. *Boys' Book of Sports*. (10.) Tells how to camp, fish, build boats, hunt, etc. Interests every boy.

Eastman, Charles A. *Indian Boyhood*. (11.) Very good.

Warner, Charles Dudley. *Being a Boy*. (10.)

Seton, Ernest Thompson. *Wild Animals I Have Known*. (12.)

Seton, Ernest Thompson. *Lives of the Hunted*. (12.)

Seton, Ernest Thompson. *Biography of a Grizzly*. (12.)

Roberts, Charles G. D. *Kindred of the Wild*. (11.)

Seton, Grace Gallatin Thompson. *A Woman Tenderfoot in the Rockies*. (14.) Of special interest to girls. Illustrated.

Muir, John. *Our National Parks*. (14.) A great book on the forests and mountains of the West. Illustrated.

Brooks, Noah. *First Across the Continent*. The story of the Lewis and Clark expedition. (12.)

Burroughs, John. *Squirrels and Other Fur Bearers*. Illustrated. (11.)

Burroughs, John. *Songs of Nature*. Poetry of the out-of-door world. (15.)

Thoreau, Henry D. *Walden; or Life in the Woods*. (15.) Thoreau was the first poet naturalist of this country. He was but little appreciated during his lifetime.

Thoreau, Henry D. *Cape Cod*. (15.)

Thoreau, Henry D. *Excursions*. (14.) The most suitable of the author's books for young people.

Allen, James Lane. *A Kentucky Cardinal*. (16.) This and most of the novels of James Lane Allen are pervaded by a fine spirit of nature, and for that reason are included here.

Allen, James Lane. *Aftermath*. A novel. (16.)

Allen, James Lane. *The Choir Invisible*. A novel. (16.)

Wheelock, Irene G. *Nestlings of Forest and Marsh*. (12.) Interesting reading on nests and nestlings.

Morley, Margaret W. *Wasps and Their Ways*. (10.)

Morley, Margaret W. *Life and Love*. (16.) All teachers should read this.

Jordan, David Starr. *Science Sketches*. (12.) Very good for teachers.

Clark, E. B. *Birds of Lakeside and Prairie*. Good, readable accounts of bird life. Illustrated.

Dickerson, Mary C. *Moths and Butterflies*. Very good. Instructive and readable.

Silloway, P. M. *Some Common Birds*. Interesting, readable accounts of about fifty birds.

Ingersoll, Ernest. *Wild Life of Orchard and Field.*

SECTION X. BOOKS OF SPECIAL INTEREST TO THE SOUTH AND WEST.

1. Lounsberry, Alice. *Southern Wild Flowers and Trees.*
2. Keyser, Leander S. *Birds of the Rockies.* Well written and beautifully illustrated.
3. Bailey, Florence M. *Handbook of Birds of the Western United States.* The only book for identification of all western birds. Illustrated.
4. Wheelock, Irene G. *Birds of California.* A popular reference book. With full-page plates and 75 illustrations in the text by Bruce Horsfall. Another edition of above, flexible binding. Net \$1.50.
5. Parsons, Mary, and Buck, M. W. *Wild Flowers of California.* Well illustrated with colored plates and black and white figures for the ready identification of flowers.

SECTION XI. MAGAZINES.

1. *Bird Lore.* Bimonthly. Harrisburg, Pa. Per year \$1.00. Published for bird study and bird protection. Organ of the Audubon Societies. Very good.
2. *Recreation.* Monthly. 23 W. Twenty-fourth Street, New York City. Takes a strong stand for national protection of our game birds, fish and forests. Always gives several pages on natural history.
3. *Country Life in America.* Monthly. Beautifully illustrated. The best magazine on rural and suburban life in general. Devotes much attention to flowers, gardening, trees, shrubbery, etc.
4. *St. Nicholas.* Monthly. For Young People.
5. *Outing.* Monthly.
6. *Forest and Stream.* Weekly.
7. *Field and Stream.* Monthly.
8. *Plant World.* Monthly. Organ of the Wild Flower Preservation Society.
9. *Birds and Nature.* Monthly. Contains beautiful colored photographs.

SECTION XII. U. S. GOVERNMENT PUBLICATIONS.

Sent free upon application to Secretary of Agriculture, Washington, D. C.

I. FARMER'S BULLETINS.

28. *Weeds; and How to Kill Them.*
40. *Farm Drainage.*
51. *Standard Varieties of Chickens.*

- 54. *Some Common Birds in Their Relation to Agriculture.*
- 55. *The Dairy Herd.*
- 59. *Bee Keeping.*
- 64. *Ducks and Geese.*
- 66. *Meadows and Pastures.*
- 70. *Insect Enemies of the Grape.*
- 75. *The Grain Smuts.*
- 86. *Thirty Poisonous Plants.*
- 94. *The Vegetable Garden.*
- 99. *Insect Enemies of Shade Trees.*
- 104. *Notes on Frost.*
- 106. *Breeds of Dairy Cattle.*
- 190. *Farmers' Reading Courses.*
- 113. *The Apple and How to Grow It.*
- 127. *Important Insecticides.*
- 132. *Insect Enemies of Growing Wheat.*
- 134. *Tree Growing in Rural School Grounds.*
- 141. *Poultry Raising on the Farm.*
- 154. *The Fruit Garden.*
- 156. *The Home Vineyard.*
- 157. *The Propagation of Plants.*
- 171. *Control of the Codling Moth*

II. YEAR BOOKS OF THE DEPARTMENT OF AGRICULTURE.

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- 5. *House Flies.*
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- 7. *The True Clothes Moth.*
- 8. *The Bedding.*
- 9. *Notes on Peach Culture.*
- 10. *Value of Good Roads to Farmers.*
- 11. *Review of Economic Ornithology in the United States.*

IV. If you are interested send to "Secretary of Agriculture," Washington, D. C., for lists of publications issued by the Department of Agriculture. One can make up a very large and very practical Nature Study Library of government publications. The

very small list given here scarcely shows the range of the government publications. Lists sent free.

United States Government Publications for sale by "Superintendent of Documents, Washington, D. C." Remit cash or money orders; stamps and checks not accepted.

1. *Food of Bobolink, Blackbird and Grockle*, 5 cents.
2. *Relation of Sparrows to Agriculture*, 10 cents.
3. *The Chinch Bug*. New Series, 10 cents.
4. *The Honey Bee*. A Manual of Agriculture, 15 cents.
5. *Principal of Household Insects of the United States*, 10 cents.
6. *Insects Affecting Domestic Animals*, 20 cents.
7. *The Gypsy Moth in America*, 5 cents.
8. *Suggestions to Pioneer Farmers in Alaska*, 5 cents.
9. *Forest Influences*, 15 cents.
10. *Practical Tree Planting in Operation*, 5 cents.
11. *Big Trees of California*, 15 cents.
12. *Nut Culture in the United States*, 30 cents.
13. *Plant Breeding*, 10 cents.

XIII. Send for List of Bulletins issued by your State Agricultural Experiment Station. Select what interests you. Publication sent free.

XIV. Send for List of Nature Study Publications issued by Cornell University, Ithaca, N. Y. They contain much practical material.

XV. Do not forget to use your own eyes and ears.

M. J. 9
P. P. P.



